PB85-148963

Guidance for the Reregistration of Pesticide Products Containing Fensulfothion as the Active Ingredient

(U.S.) Environmental Protection Agency
Washington, DC

22 Dec 83

U.S. Department of Commerce
National Technical Information Service
NTIS

PB85-148963

GUIDANCE FOR THE REREGISTRATION OF PESTICIDE PRODUCTS

CONTAINING

FENSULFOTHION

AS THE ACTIVE INGREDIENT

ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF PESTICIDE PROGRAMS

WASHINGTON, D.C. 20460

December 22,1983

EPA 540/RS-83=02]

REPRODUCED BY
NATIONAL TECHNICAL
INFORMATION SERVICE
U.S. DEPARTMENT OF COMMERCE
SPRINGFIELD, VA. 22161

50272-101

REPORT DOCUMENTATION PAGE	1. REPORT NO.	2.	3. Recipient's Accession No. PB85 148963/AS
4. Title and Subtitle Guidance for the Reregistration of Pesticide Products containing Fensulfothion as the active ingredient			5. Report Date 12/83 6.
7. Author(s) EPA Registration Division, Office of Pesticide Programs			8. Performing Organization Rept. No. 540/RS-83-021
9. Performing Organization Name and Address EPA Office of Pesticide Programs 401 M St. S.W. Washington, D.C. 20460			10. Project/Task/Work Unit No. 11. Contract(C) or Grant(G) No. (C) (G)
12. Sponsoring Organization Name and Address EPA Office of Pesticide Programs 401 M St. S.W. Washington, D.C. 20460			13. Type of Report & Period Covered 14.

15. Supplementary Notes

16. Abstract (Limit: 200 words)

This document contains information regarding reregistration of pesticide products containing the subject active ingredient. The document includes how to register under a registration standard, regulatory position and rationale, and summaries of data requirements and data gaps. Also included is a bibliography containing citations of all studies reviewed by EPA in arriving at the positions and conclusions contained in the standard.

17. Document Analysis a. Descriptors

b. Identifiers/Open-Ended Terms

c. COSATI Field/Group

18. Availability Statement	19. Security Class (This Report)	21. No. of Pages
Fully available	Unclassified	105
	20. Security Class (This Page)	22. Price

(See ANSI-Z39.18) See Instructions on Reverse OPTIONAL FORM 272 (4-77) (Formerly NTIS-35) Department of Commerce

TABLE OF CONTENTS

Introduction 1

I. Regulatory Position. 4

II. Requirement for Submission of Generic Data 34

III. Requirement for Submission of Product-Specific Data 60

IV. Submission of Revised Labeling and Packaging Information. 64

A. Label Contents . . . . . .

1. Product Name . . . . . .
2. Company Name and Address . . . . . .
3. Net Contents . . . . . .
4. Product Registration Number. . . . . .
5. Producing Establishment Registration Number. . . . . .
6A Ingredient Statement . . . . . .
6B Pounds Per Gallon Statement. . . . . .
7. Front Panel Precautionary Statements . . . . . .
7A Child Hazard Warning Statements. . . . . .
7B Signal Word. . . . . .
7C Skull and Crossbones and Word Poison . . . . . .
7D Statement of Practical Treatment . . . . . .
7E Referral Statement . . . . . .
8. Side/Back Panel Precautionary Labeling . . . . . .
8A Hazard to Humans and Domestic Animals. . . . . .
8B Environmental Hazard . . . . . .
8C Physical or Chemical Hazard. . . . . .
9 Misuse Statement . . . . . .
10A Storage and Disposal Block . . . . . .
10B Directions for Use . . . . . .

B. Collateral Information 68

V. Instructions for Submission. 69

APPENDICES

II-1	Bibliography
II-2	FIFRA §3(c)(2)(B) Summary Sheet - EPA Form 8580-1
II-3	Certification of Attempt to Enter Into an Agreement With Other Registrants for Development of Data EPA Form 8580-6
III-1	Product Specific Data Report (End-Use Products) EPA Form 8580-4
IV-1	40 CFR §162.10 Labeling Requirements
IV-2	Table of Labeling Requirements and Sample Labels
IV-3	Physical/Chemical Hazards Labeling Statement
IV-5	Storage and Disposal Statements

Note: Appendices IV-4 and IV-6 are not germane to this document and are not included.

INTRODUCTION

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA Section 3(g), as amended in 1978, directs EPA to reregister all pesticides as expeditiously as possible. Each registrant of a manufacturing use product of the active ingredient who wishes to continue to sell or distribute that product must apply for reregistration.

To fulfill this Congressional mandate, we have established the Registration Standards program which will review all pesticide active ingredients first registered before January 1, 1977. These pesticides will be reviewed in use clusters which are prioritized on the basis of a ranking scheme giving preference to pesticides used on food and feed crops.

The Registration Standards program involves a thorough review of the scientific data base underlying pesticide registrations and an identification of essential but missing studies which may not have been required when the product was initially registered or studies that are now considered insufficient. Our reassessment results in the development of a regulatory position, contained in this document, on each pesticide and its uses. The regulatory position may require the registrant to modify product labels to provide additional precautionary statements, restrict the use of the pesticide to certified applicators, provide reentry intervals, modify uses or formulation types, specify certain packaging limitations, or other requirements to assure that proper use of the pesticide poses no potential adverse effects to human health or the environment.

The scientific review, which is not contained herein but is available upon request, concentrates on the technical grade of the active ingredient and identifies missing generic data. However, during the review of these data we are also looking for potential hazards that may be associated with the formulated (end-use) products that contain the active ingredient. If we find serious concerns, we will bring formulated products under the provisions of the Registration Standards program to the extent necessary to protect the public.

EPA has the authority under FIFRA §3(c)(2)(B) to require that certain registrants submit generic data that will answer our questions regarding the hazard that may result from the intended use of the pesticide under review. Further, §3(c)(2)(B) provides that these data are to be submitted by those registrants who do not qualify for the formulator's exemption [FIFRA §3(c)(2)(D)]. Normally, this means that the registrants who are responsible for filling the data gaps are the manufacturing-use product producers (basic

suppliers of the active ingredient). However, end-use producers will not qualify for the formulator's exemption if the source of their active ingredient: (1) is not registered with EPA, and/or (2) is produced by the registrant's firm, or a firm which has ownership in common with the registrant's firm. These end-use producers can qualify for the formulator's exemption if they change their source of supply to a registered source, provided the source does not share ownership in common with the registrant's firm. If the end-use product registrant decides to switch sources, a new Confidential Statement of Formula, EPA Form 8570-4, must be submitted to the appropriate Product Manager within 90 days of receipt of this Guidance Document. The chart on the following page shows what is generally required of those who do and do not qualify for the formulator's exemption in the Registration Standards program.

If you decide to request the Agency to discontinue the registration of any of your products subject to the reregistration requirements of this Guidance Document, please notify the Product Manager named in the cover letter, within 90 days from the receipt of this document, that you wish to voluntarily cancel the registration(s). It you decide to maintain your product registration(s), you must provide the information described in the following pages within the timeframes outlined. EPA will issue a notice of intent to cancel or suspend the registration of any currently registered product if you fail to comply with the requirements set forth in this Guidance Document.

This Guidance Document will be supplemented by EPA with additional information about compliance with data support requirements. In Monsanto v. Administrator, EPA was recently enjoined from implementing in any way the "mandatory data licensing" aspects of §3(c)(1)(D) of FIFRA. EPA is assessing the implications of the injunction for the reregistration process. Because this situation is currently unresolved, EPA has decided to proceed with the requirements in this Guidance Document which do not relate to compliance with the §3(c)(1)(D) provisions and to supplement the Document with additional guidance when circumstances permit. Failure to comply with the provisions of the subsequent guidance will also result in issuance by EPA of an intent to cancel the affected product registration(s).

Registrants are reminded that §6(a)(2) of FIFRA requires you at any time to submit factual information raising concerns of possible unreasonable adverse effects of a pesticide. You should notify the Agency of interim results of studies in progress if those results show possible adverse effects.

PRODUCTS SUBJECT TO THE REGISTRATION STANDARDS PROGRAM	ACTION(S) REQUIRED TO MAINTAIN REGISTRATION
I. Products That Do Not Qualify For The Formulator's Exemption	
A. Single Active Ingredient Products*	These products must be reregistered. To obtain reregistration, labeling, packaging and data requirements must be satisfied in accordance with the Registration Standards Guidance Document.
B. Multiple Active Ingredient Products	These products will not be reregistered at this time. However, generic data required to continue the registration of the active ingredient under review, as described in the Registration Standards Guidance Document, will be required and some labeling precautions may also be required.
II. Products That Do Qualify For The Formulator's Exemption	Only when additional restrictions or labeling are needed to protect man or the environment will these products be subject to the Registration Standard requirements. Affected products will be dealt with in a variety of ways, including but not limited to the Label Improvement Program and special intent to cancel notices.

* End-use products of registrants who also produce a manufacturing-use product will not be required to be reregistered provided that registrant fulfills the requirements specified in the Guidance Document for manufacturing-use product(s). Such end-use products will be subject to the labeling changes required for products in "II" above. If there are no manufacturing-use products registered by any company end-use products will be required to be reregistered.

NOTE: If all registrants in "I" above fail to meet the requirements in I-A and B above, then the registrants in "II" lose their right to qualify for the formulator's exemption and become subject to the requirements in I-A and B.

I. REGULATORY POSITION AND RATIONALE

A. INTRODUCTION

This Registration Standard describes the regulatory position of the Environmental Protection Agency (the Agency) on registered manufacturing-use products (MUPs) containing the insecticide and nematicide fensulfothion. The Agency's position is based on an evaluation of all registered uses and registered MUPs with fensulfothion as the sole active ingredient. This position is based on a number of considerations. Foremost among these is an analysis of fensulfothion based on the risk criteria found in Section 162.11(a) of Title 40 of the U.S. Code of Federal Regulations. The Standard also considers labeling requirements, tolerances, "Special Local Needs" registrations authorized by Section 24(c) of the FIFRA, as well as Federal registrations granted or pending under Section 3 of the FIFRA. Finally, the Agency sets forth the data requirements that must be met to register products covered by this document.

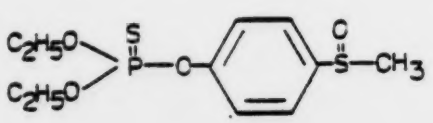
This Standard only addresses registration requirements for current or substantially similar future MUPs and their intermediaries. Fensulfothion MUPs that differ appreciably from those described here may require amendments to the Standard. End-use products (EUPs) will be registered under the Label Improvement Program.

B. CHEMICAL DESCRIPTION AND USE PROFILE

Fensulfothion is the common name approved by the International Organization for Standardization (ISO) and the British Standards Institution (BSI) for an insecticide-nematicide manufactured and registered in the United States by the MOBAY Chemical Corporation with the chemical names of 0,0-diethyl 0-[p-(methylsulfinyl) phenyl] phosphorothioate and 0,0-diethyl 0-[4-(methylsulfinyl) phenyl] phosphorothioate.

Additional names used for fensulfothion include BAY 25141, S-767, and the the trade names DASANIT and TERRACUR P. The Chemical Abstracts Service (CAS) Registry Number is 115-90-2 and the EPA Reference Number is 032701.

The empirical formula is $C_{11}H_{17}O_4S_2P$ and the molecular weight is 308.3. The structural formula is as follows:



The 90% technical material also serves as a manufacturing-use product under the trade name DASANIT.

Fensulfothion is an insecticide and nematicide which is Federally registered for use on the following food/feed crops : bananas, corn (field, pop-, and sweet), cotton, onions (dry bulb), peanuts, pineapples, plantain, potatoes, rutabagas, sorghum, soybeans, sugarcane, sweet potatoes, and tomatoes. Fensulfothion formulations are also registered for use on tobacco, citrus seedlings, lawns, ornamental turf, ornamental herbaceous plants, ornamental woody shrubs and vines, and ornamental trees.

Technical fensulfothion is a brown liquid, stable under normal use conditions, with a boiling point of 138-141°C at 0.01 mm Hg. It is soluble in most organic solvents except aliphatics. Existing data gaps related to product chemistry are identified in Table A and Table B.

As of December, 1983, MOBAY Chemical Corporation is the sole manufacturer of the one single active ingredient technical and manufacturing-use fensulfothion product, and the one fensulfothion-disulfoton multiple active ingredient manufacturing-use product.

Fensulfothion is formulated into the following single active ingredient products: a 63% (6lb/gallon) emulsifiable concentrate, a 10% granular, and a 15% granular. Fensulfothion is also formulated at various percentages with the following other active ingredients: disulfoton, thiram, and pebulate. End-use products containing fensulfothion as their sole active ingredient include 5 Section 3 Federal registrations, 20 Section 24(c) Special Local Need registrations, and 22 Intrastate registrations. End-use products containing fensulfothion plus other active ingredients include 17 Section 3 Federal registrations, 14 Section 24(c) Special Local Need registrations, and 5 Intrastate registrations.

Fensulfothion is usually applied as a preplant or at planting soil application. Postplant topical applications are permitted on a limited number of crops; these are corn, peanuts, and rutabagas. The topical applications are permitted in addition to the at planting application. The 10% and 15% granular products may be used only by commercial growers, applicators and nurserymen, while the 6 lb/gal. emulsifiable concentrate is a restricted use pesticide.

C. REGULATORY POSITION

Based on a review and evaluation of all available data and other relevant information on fensulfothion, the Agency has made the following determinations:

1. Manufacturing-use pesticide products containing fensulfothion as a sole active ingredient may be registered for sale, distribution, reformulation, and use, subject to the terms and conditions specified in this Standard.

2. Available data show that three of the criteria listed in Section 162.11(a) of Title 40 of the U.S. Code of Federal Regulations (RPAR triggers in avian, aquatic, and mammalian categories) may be met or exceeded by the current uses of fensulfothion specified in this Standard. Because of this possibility, Tier III data (field studies) have been requested in this Standard to gather

qualitative and quantitative data to support the registration and/or need for special review. Additional gaps in the data base also preclude completion of the Agency's risk assessment.

3. The "Restricted Use" classifications for the following fensulfothion use patterns will continue: all uses of concentrate solutions 63% and greater, all emulsifiable concentrates and concentrate solutions 43% and greater with disulfoton 21% and greater, all emulsifiable concentrates 32% and greater in combination with disulfoton 32% and greater, and indoor greenhouse use of granular formulations 10% and greater. Current labeling for those products subject to the "Restricted Use" classification already bear the required "Restricted Use Only" block on the front panel.

4. Registrants must provide or agree to develop additional data, as specified in the tables attached to this Standard, in order to maintain existing registrations or to permit new fensulfothion registrations.

5. Tolerance reassessment is normally a part of a Registration Standard review. The Agency is unable to complete its reassessment of fensulfothion tolerances because necessary toxicology and residue data are not available.

D. REGULATORY RATIONALE

The Agency has determined that it should continue to allow the registration of fensulfothion after considering the following:

1. Although many of the toxicology studies for technical fensulfothion were performed prior to 1970 and contain insufficient data for full evaluation, sufficient information is available to determine that this chemical is in Toxicity Category 1 by oral and dermal exposure. Additional required studies, representing gaps due to missing or incomplete studies are identified in Table A.

2. The Theoretical Maximum Residue Contribution (TMRC) to the diet, based on the relevant food factors and tolerances cited in 40 CFR §180.234, is 0.0249 mg/day. Current tolerences use 23.71% of the Acceptable Daily Intake (ADI). Since the 17-month chronic rat feeding study that was previously used to interpolate the No Observable Effect Level (NOEL) for cholinesterase depression is now declared Core Supplemental only, this means that the current NOEL, ADI, and Maximum Permissible Intake (MPI) are now only partially supported by data. The Agency believes, however, that the numbers previously set are relatively accurate and the current ADI (0.0018 mg/kg/day) and MPI (0.105 mg/day for a typical 60 kg individual) will be used in the interim.

3. The Agency has not received a complete description of the manufacturing process for the 90% technical product. This along with other product chemistry data gaps are identified in Tables A and B.

4. The plant and animal metabolites are well studied and understood. Most tolerances for residues are supported with data, however, additional data must be submitted to support tolerances for residues in or on the following commodities: bananas, peanuts, peanut hulls, plantain, and potatoes (processing data only). The Category 3 classification [40 CFR 180.6(a)] for residues in milk, eggs, poultry meat, fat or meat by-products of poultry is considered adequate, i.e. no tolerance are required. In addition, human exposure to fensulfothion residues via tobacco products and their smoke has been adequately delineated.

5. Available data are insufficient to fully assess the fate of fensulfothion in the environment; however, based on what is known, ground water contamination does not appear to be a problem with this chemical. Data are insufficient to assess the exposure of humans and non-target organisms to the chemical or its degradates.

6. No federal reentry interval had been established for workers entering fields treated with fensulfothion. Since the State of California requires a reentry interval of 7 days for soil applied fensulfothion to mitigate human-skin contact with residues on wet soil, and since fensulfothion is a toxicity category I pesticide, the Agency is establishing an interim reentry interval of seven days when fensulfothion is applied to soil and 24 hours for all applications of fensulfothion where agricultural practices will involve hand labor with prolonged, intimate foliar contact.

   The reentry interval will be waived when fensulfothion is applied to soil if the fieldworkers use impermeable foot-wear and use impermeable gloves when hand contact with soil will occur. If the soil is dry, the seven day reentry period will be waived, and the 24-hour reentry interval will then apply.

   The restrictions for soil and foliar application are label requirements. Refer to the Required Labeling chapter for specific statements.

7. Fensulfothion was developed in 1957 by Bayer Corporation, Germany. The technical and manufacturing-use product was registered in the United States on December 29, 1965. Reported pesticide incidents involving fensulfothion alone between 1966 and 1983 include 25 involving human injury and 4 involving animals. Most of the human incidents resulted from failure to use safety equipment while applying fensulfothion. Other incidents were the result of improper disposal, handling, or storage. Because the incidents involve occasions of misuse, no additional precautionary statements are necessary at this time to minimize the risk of injury.

8. The toxicity of fensulfothion to terrestrial and aquatic non-target organisms is very high. Residue calculations indicate that 3 RPAR triggers (mammalian, avian, and aquatic) have been exceeded. In all cases this Standard has asked for Tier III data (field studies) to gather qualitative and quantitative data to support the registration and/or need for special review. Because of fensulfothion's extensive number of use patterns and its high

toxicity to wildlife, numerous endangered species have been identified that could be impacted. In addition, the Agency has issued a Notice of Proposed Rulemaking on granular pesticides that proposed restricted use classification for all granular and fertilizer products containing greater than 2% fensulfothion (except treatment of plant benches, beds, and potting soil) because of acute oral toxicity and residue effects on avian species (Federal Register Vol. 44, No. 149, pp 45219-45224). The Agency is currently considering various approaches to address the endangered species concerns for this and other chemicals, and this Standard may be amended to incorporate the results of this additional review.

9. The use of fensulfothion is not permitted on food crops grown in greenhouses. The use on non-food crops grown in greenhouses was removed from the labeling of the 10% and 15% granular products on December 10, 1979 by addition of "(OUTDOORS ONLY)" for the sites benches, beds, and potting soil. Greenhouse non-food, non-foliar application is currently registered for a 63% emulsifiable concentrate with the Restricted Use Only classification.

10. In accordance with FIFRA, the Agency cannot routinely cancel existing registrations of products or withhold registration merely for lack of data unless risks are clearly identified from the data that have been submitted and evaluated. Rather, the publication of this Standard provides a mechanism for identifying data needs and for imposing restrictions based on the review of data currently available. Registration of fensulfothion under this Standard will allow for the upgrading of labels during the period in which the required data are being generated.

E. CRITERIA FOR REGISTRATION UNDER THIS STANDARD

All manufacturing-use products which contain fensulfothion as the sole active ingredient are subject to this Standard and must either comply with the acute toxicity limits, product composition, and use pattern requirements listed in Section F of this document or submit data and a justification to amend the Standard to encompass such products.

The applicant for registration or reregistration of products subject to this Standard must comply with all terms and conditions described in it, including a commitment to fill data gaps on a schedule specified by the Agency. Applicants for registration under this Standard must follow the instructions contained in this Guidance Package and complete and submit the appropriate forms within the time specified.

F. ACCEPTABLE RANGES AND LIMITS

1. Product Composition Standards

To be covered under this Standard, manufacturing-use products must contain at least 90% fensulfothion as the sole active ingredient. The composition of each manufacturing-use fensulfothion product must be substantially similar to that in currently registered manufacturing-use products. Any manufactur-

ing use product not meeting these requirements will be considered a new product and will require an amendment to the Standard.

2. Acute Toxicity Limits

The Agency will consider registration of manufacturing-use products containing fensulfothion for any acute toxicity category, provided the labeling of those products bears appropriate precautionary statements.

3. Use Patterns

To be registered under this Standard, manufacturing-use products containing fensulfothion may be labeled for formulation only into end-use products for the following sites (as summarized from the EPA Index to Pesticide Chemicals, page 13 to page 33 of this document):

a. Terrestrial, Non-Domestic, Food Uses

Bananas, Plantain
Cereal Grains - Corn (field, pop, and sweet), Sorghum
Cotton
Onions (dry bulb)
Peanuts
Pineapples
Root and tuber vegetables - Potatoes, Rutabagas, Sugar Beets, Sweet Potatoes
Soybeans
Sugarcane
Tomatoes

b. Terrestrial, Non-Domestic, Non-Food Uses

Citrus seedling roots
Lawns
Ornamental turf
Ornamentals - herbaceous perennial, woody shrubs and vines, trees
Tobacco

c. Greenhouse, Non-Food Uses

Ornamentals - non-foliar application only

End-use products formulated from products under this Standard may be concentrate solutions, emulsifiable concentrates, or granulars.

G. REQUIRED LABELING

All manufacturing-use and end-use products containing fensulfothion must bear appropriate labeling as specified in 40 CFR 162.10. The following additional statements are required:

1. Use Pattern Statements

All fensulfothion manufacturing-use products must contain one or more of

the following use pattern statements listed below:

- Terrestrial, Non-Domestic, Food Use on [specify food crops]
- Terrestrial, Non-Domestic, Non-Food Use on [specify non-food sites]
- Greenhouse, Non-Food Uses (Non-foliar application)

2. Precautionary Statements

Labels for all manufacturing-use products containing fensulfothion must bear statements reflecting the acute human toxicity of the compound. An updated description of precautionary statements which must appear for each type of product to be in compliance with 40 CFR §162.10 is included as Appendix IV-1 in this document.

The following environmental hazard warning statement must appear on all manufacturing-use product labels:

> "This product is toxic to fish and extremely toxic to wildlife. Do not discharge into lakes, streams, ponds, or public waters unless in accordance with an NPDES permit. For guidance, contact your Regional Office of the EPA."

Based on data reviewed by the Agency, the following label revisions are required for end-use products in this guidance package. The environmental hazards section should be revised as follows:

> "This product is toxic to fish and extremely toxic to wildlife. Use with care when applying in areas frequented by wildlife. Birds feeding on treated areas may be killed. Cover, disc, or incorporate spill areas. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not apply directly to water or wetlands. Do not contaminate water by cleaning of equipment or disposal of wastes. This product is highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds while bees are actively visiting the treatment area."

Since a complete assessment of hazards to workers cannot be made at this time due to insufficient data, reentry precautionary statements as follows will be required on end-use products until data showing acceptable risk levels are submitted and evaluated:

> "Unprotected workers should not re-enter treated fields until 24 hours after application. Unprotected workers should not re-enter fields where the soil is wet until 7 days after soil application."

The Agency may impose additional label requirements after the receipt and review of the data to be submitted under this Standard, and/or the Agency's review of all nematicide labeling in response to a request from the State of California to consider, among other things, a 48 hour reentry interval for applications of nematicides to dry soils.

H. TOLERANCE REASSESSMENT

A summary of tolerances for fensulfothion is presented in Table 1. This table also includes information on Canadian, Mexican, and Codex tolerances for fensulfothion. The tolerances established in the United States were derived from data submitted to the Agency.

The tolerances for combined residues of fensulfothion and its cholinesterase-inhibiting metabolites, as listed in Title 40 of the U.S Code of Federal Regulations (CFR) Section 180.234, in or on the following commodities are supported: corn (fresh and grain), corn forage and fodder, cottonseed, onions (dry bulb), pineapples, rutabagas, sorghum grain, sorghum forage and fodder, soybeans, sugar beet roots and tops, sugarcane, sweet potatoes, tomatoes, and meat, fat, and meat by-products of cattle, goats, hogs, horses, and sheep. Also, the Category 3 classification [40 CFR §180.6(a)] for residues in milk, eggs, poultry meat, fat, and meat by-products of poultry is considered adequate, i.e. no tolerances are required.

Additional data are required, however, to determine the adequacy of the tolerances for residues in or on the following commodities: bananas, peanuts, peanut hulls, plantain, and potatoes (processing data only). Tolerances are pending for residues in or on beans (green and dried, except lima) and bean forage and hay.

The Theoretical Maximum Residue Contribution (TMRC) to the diet, based on the relevant food factors and tolerances cited in 40 CFR §180.234, is 0.0249 mg/day assuming a 1.5-kg diet. Since some of the tolerances cannot be assessed presently, a future change in the TMRC may be anticipated.

The current Acceptable Daily Intake (ADI) calculations are based on interpolating a No Observable Effect Level (NOEL) for cholinesterase depression in rats of 0.35 ppm (0.018 mg/kg/day) from the 17 month chronic rat feeding study when, in fact, no NOEL was actually observed at the lowest dose of 1 ppm. Using a safety factor of 10 (for cholinesterase inhibition) results in an ADI of 0.0018 mg/kg/day and a Maximum Permissible Intake (MPI) of 0.105 mg/day for a typical 60 kg individual. The amount of the ADI used by the existing tolerances was calculated to be 23.71%.

Since the existing 17 month chronic rat feeding study has been categorized as Core-Supplementary in this Standard and is required to be repeated, the previously used NOEL, ADI, and MPI are no longer fully supported by data. They will, however, be used provisionally on an interim basis until the new chronic studies are received and evaluated.

TABLE 1. SUMMARY OF PRESENT TOLERANCES FOR FENSULFOTHION

Commodity	Tolerances (parts per million) United States	Canada	Mexico	International (Codex)
Bananas	0.02	-	-	0.02
Beets, sugar	0.05	-	-	-
Beets, sugar, tops	0.05	-	-	-
Cattle, fat	0.02	-	-	0.02
Cattle, MBYP	0.02	-	-	0.02
Cattle, meat	0.02	-	-	0.02
Corn, field, fodder	1.0	-	-	-
Corn, field, forage	1.0	-	-	-
Corn, fresh (inc. sweet) (K+CWHR)	0.1	0.1	-	0.1
Corn, grain	0.1	0.1	-	0.1
Corn, pop, fodder	1.0	-	-	-
Corn, pop, forage	1.0	-	-	-
Corn pop, grain	0.1	0.1	-	0.1
Corn, sweet, fodder	1.0	-	-	-
Corn, sweet, forage	1.0	-	-	-
Cotton, seed	0.02	-	-	-
Goats, fat	0.02	-	-	0.02
Goats, MBYP	0.02	-	-	0.02
Goats, meat	0.02	-	-	0.02
Hogs, fat	0.02	-	-	-
Hogs, MBYP	0.02	-	-	-
Hogs, meat	0.02	-	-	-
Horses, fat	0.02	-	-	-
Horses, MBYP	0.02	-	-	-
Horses, meat	0.02	-	-	-
Onions, dry bulb	0.1	0.1	-	0.1
Peanuts	0.05	-	-	0.05
Peanuts, hulls	5.0	-	-	-
Pineapples	0.05	-	-	0.05
Pineapples, forage	0.05	-	-	-
Plantains	0.02	-	-	-
Potatoes	0.1	0.1	-	0.1
Rutabagas, roots	0.1	0.1	-	0.1
Sheep, fat	0.02	-	-	0.02
Sheep, MBYP	0.02	-	-	0.02
Sheep, meat	0.02	-	-	0.02
Sorghum, fodder	1.0	-	-	-
Sorghum, forage	1.0	-	-	-
Sorghum, grain	0.1	-	-	-
Soybeans	0.02	-	-	-
Soybeans, forage	0.1	-	-	-
Sugarcane	0.02	-	-	-
Sweet potatoes	0.05	-	-	-
Tomatoes	0.1	-	-	0.1

FINAL
SRI
32701

O,O-DIETHYL O-[p-(METHYLSULFINYL)PHENYL] PHOSPHOROTHIOATE*

TYPE PESTICIDE: Insecticide (also refer to Nematicide entry)

FORMULATIONS: Tech (90%); G (10%, 15%); EC (6 lb/gal, 63%)

GENERAL WARNINGS AND LIMITATIONS:
The 63 percent and 6 pounds per gallon emulsifiable concentrate formulations are RESTRICTED USE PESTICIDES.
Bee Caution:
This product is highly toxic to bees exposed to direct treatment or residues on crops. Protective information may be obtained from your State Cooperative Agricultural Extension Service.
Agricultural Crop Tolerances:
Bananas - 0.02 ppm
Cottonseed - 0.02 ppm
Pineapples - 0.05 ppm
Pineapples, forage - 0.05 ppm
Plantains - 0.02 ppm
Soybeans - 0.02 ppm
Soybeans, forage - 0.1 ppm
Sugarcane - 0.02 ppm
Tomatoes - 0.1 ppm
Livestock and Poultry Tolerances:
Cattle (fat, meat, meat byproducts) - 0.02 ppm
Goats (fat, meat, meat byproducts) - 0.02 ppm
Hogs (fat, meat, meat byproducts) - 0.02 ppm
Horses (fat, meat, meat byproducts) - 0.02 ppm
Sheep (fat, meat, meat byproducts) - 0.02 ppm

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations

AGRICULTURAL CROPS

General Warnings and Limitations: Unless otherwise specified, apply emulsifiable concentrate formulation in sufficient water for thorough coverage. Do not place treated zones (bands or furrows) closer together than 6 inches.

*Dasanit
O,O-diethyl O-[4-(methylsulfinyl)phenyl] phosphorothioate
fensulfothion

Issued: 5-24-82 III-032701-1

O,O-DIETHYL O-[p-(METHYLSULFINYL)PHENYL] PHOSPHOROTHIOATE

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
8006AA 5004AA 5005AA	Corn, Field Corn, Pop Corn, Sweet		0.1 ppm [grain and fresh corn (including sweet corn), kernel plus cob with husk removed] 1 ppm (fodder, forage) 30 day pregrazing or preharvest interval through 1 pound per acre for postplant foliar application. Do not make more than 2 foliar applications during the growing season. 40 day pregrazing or preharvest interval through 1.2 ounces per 1,000 feet of row for basal soil application (at cultivation).
AMBHA	Corn rootworms	0.5-1 lb/A [with 40 in. row spacing] or 0.6-1.2 oz/ 1,000 ft row [with any row spacing] (10-15% G) (6 lb/gal EC)	Soil application at planting (band). Apply in a 4 to 6 inch band behind planter shoe and in front of press wheel. Apply the low rate for light to moderate infestations and the high rate for moderate to severe infestations. Split boot application at planting (band). Apply emulsifiable concentrate formulation with liquid fertilizer as bands 2 inches away from seed on both sides of planting row. An additional emulsifier may be needed with high phosphorous fertilizers.
		0.75-1 lb/A [with 40 in. row spacing] or 0.9-1.2 oz/ 1,000 ft row [with any row spacing] (10-15% G) (6 lb/gal EC)	Soil application at cultivation (band). Apply uniformly in a 4 to 6 inch band along the row around the base of the stalks. Apply directly in front of the cultivating equipment. Consult your local Cooperative Agricultural Extension Service for proper timing. One application at cultivation may be made in addition to 1 emulsifiable concentrate formulation application at planting, but do not make more than 2 applications during the growing season by any 1 method or combination of methods.

O,O-DIETHYL O-[p-(METHYLSULFINYL)PHENYL] PHOSPHOROTHIOATE

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Corn, Field cluster (continued)		
MCCA	European corn borer	0.75-1 lb/A (10-15% G)	Use limited to Midwest United States. Broadcast foliar application. Apply into whorls approximately 10 days following maximum moth activity when egg masses average 1 or more per plant. A second application may be needed in 7 to 10 days. Postplant foliar applications may be made in addition to soil applications (at planting or at cultivation). Claim for control is limited to second brood of pest.
KABA CAHA	Seedcorn beetle Seedcorn maggot	1 lb/A [with 40 in. row spacing] or 1.2 oz/1,000 ft row [with any row spacing] or (10-15% G)	Use limited to Midwest United States. Soil application at planting (band). Apply in a 4 to 6 inch band behind planter shoe and in front of press wheel.
VAAA	Wireworms	0.5-1 lb/A [with 40 in. row spacing] or 0.6-1.2 oz/ 1,000 ft row [with any row spacing] (15% G)	Soil application at planting (band). Apply in a 4 to 6 inch band behind planter shoe and in front of press wheel.

O,O-DIETHYL O-[p-(METHYLSULFINYL)PHENYL] PHOSPHOROTHIOATE

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
4011AA	Onions (dry bulb onion)		0.1 ppm (dry onion) In-furrow soil application (at planting time) through 0.56 ounce per 1,000 feet of row.
ACACA	Onion maggot	1 lb/A [with 18 in. row spacing] or 0.5-0.56 oz/ 1,000 ft row [with any row spacing] (10-15% G) (6 lb/gal EC)	Soil application at planting (in furrow). Apply evenly in the seed furrow. Apply emulsifiable concentrate formulation in 100 gallons of water per acre. Do not apply to green-bunch onions.
8015AA	Peanuts		0.05 ppm (peanuts) 5 ppm (hulls) 30 day preharvest interval through 1.1 ounces per 1,000 feet of row for banded soil application (preplant). 65 day preharvest interval through 4.4 ounces per 1,000 feet of row for double banded soil application (at pegging). Do not apply more than 6 pounds per acre at pegging. Do not apply more than 7 pounds per acre in any single crop year. Do not allow livestock to feed on vines or hay from treated fields.
BMBDA	Lesser cornstalk borer	1 lb/A [with 36 in. row spacing] or 1.1 oz/1,000 ft row [with any row spacing] (6 lb/gal EC)	Use limted to OK and TX. Postplant soil application (band). Apply in 20 to 30 gallons of water per acre as a basal directed spray. Repeat as needed but do not make more than 4 applications during the growing season. Do not apply basal directed spray if any spray or granular application was made at planting or pegging.

O,O-DIETHYL O-[p-(METHYLSULFINYL)PHENYL] PHOSPHOROTHIOATE

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
	Peanuts (continued)		
TBMBDA NAMBMA	Lesser cornstalk borer Southern corn rootworm	2-4 lb/A [with 36 in. row spacing] or 2.2-4.4 oz/ 1,000 ft row [with any row spacing] (10% G)	Use limited to AL and GA. Soil application at pegging (double band). Apply uniformly in a 12 to 18 inch band over the row at pegging. Mix the granules into the soil to a depth of 1 to 2 inches on each side of the row. For moderate to heavy infestations of lesser cornstalk borer, a second pegging application should be made 18 to 21 days later.
IOAAAA	Thrips	2-4 lb/A [with 36 in. spacing] or 2.25-4.5 oz/ 1,000 ft row [with any row spacing] (10-15% G) (6 lb/gal EC)	Use of granular formulation is limited to the Southeastern United States. Preplant soil application (band). Apply in a 12 to 18 inch band. Incorporate into the top 4 to 6 inches of soil. Plant seed in the center of the treated band. Claims for control are limited to reduction of pests in the early growing season.
		3-6 lb/A (10-15% G) (6 lb/gal EC)	Use of granular formulation is limited to the Southeastern United States. Preplant broadcast soil application. Incorporate into the top 4 to 6 inches of soil. Claims for control are limited to reduction of pests in the early growing season.

O,O-DIETHYL O-[p-(METHYLSULFINYL)PHENYL] PHOSPHOROTHIOATE

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
4013AA	Potato		0.1 ppm Broadcast soil application (preplant) through 5 pounds per acre.
AVAFA	Southern potato wireworm	2 lb/A (10-15% G)	Preplant broadcast soil application. Incorporate into top 3 to 4 inches of soil.
AVAGA	Tobacco wireworm		
AMBWC	Tuber flea beetle (larvae)	5 lb/A (10-15% G)	
AVAAA	Wireworms (Cteni-cera spp.)		
4015AA	Rutabaga		0.1 ppm (roots) 40 day preharvest interval through 2 ounces per 1,000 feet of row for banded soil applications (preplant and postplant.) Do not apply more than 2.5 pounds per acre. Do not make more than 4 applications during the growing season.
ACADA	Cabbage maggot	1-2 oz/1,000 ft row [with any row spacing] (10-15% G)	Preplant soil application (band). Apply in a 4 to 6 inch band prior to seeding. Incorporate into top 1 inch of soil then seed into the center of treated band. Repeat at 28 days after planting using emulsifiable concentrate formulation with the dosage and use instructions listed below.
		1-2 oz/ 1,000 ft row [with any row spacing] (6 lb/gal EC)	Postplant soil application (band). Apply in a 6 inch band sprayed over the row immediately after seeding. Apply in not less than 3.5 gallons of water per 1,000 feet of row. Repeat at 28 days after planting. One or 2 repeat applications may be needed as a drench to wet the crown of the plant and 3 inches of soil on both sides of the row.

O,O-DIETHYL O-[p-(METHYLSULFINYL)PHENYL] PHOSPHOROTHIOATE

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
019AA	Sorghum		0.1 ppm (grain) 1 ppm (forage, fodder) Banded soil application (at planting time) through 1.275 ounces per 1,000 feet of row.
PBIA	Phyllophaga white grubs	1.03 lb/A [with 40 in. row spacing] or 1.2-1.275 oz/ 1,000 ft row [with any row spacing] (10-15% G) (6 lb/gal EC)	Use limited to OK and TX. Soil application at planting (band). Apply granular formulation as a 2 inch band approximately 0.5 inch above the seed. Apply the emulsifiable concentrate formulation in 20 gallons of water as a 3 to 4 inch band. Do not apply directly to the seed. Claims for control are limited to suppression of feeding damage.
020AA	Sugar Beets		0.05 ppm (roots and tops) Banded soil application (at planting time) through 1.35 ounces per 1,000 feet of row.
XACA	Sugarbeet root maggot	1-2 lb/A [with any row spacing] or 0.67-1.35 oz/ 1,000 ft row (10-15% G)	Soil application at planting (band). Apply in a 4 to 6 inch band in 1 of the following ways: Apply in front of the planter, incorporate lightly into the soil with shallow tilling equipment, and plant seed in center of treated band; or apply 1 inch or more above the seed behind the planter shoe and in front of the press wheel. Do not allow granules to directly contact the seed. For light, sandy soils, use only the lower dosage.
018AA	Sweet Potato		0.05 ppm Broadcast soil application (preplant) through 7 pounds per acre.
VAFA	Southern potato wireworm	7 lb/A (10-15% G)	Use limited to Southeastern United States. Preplant broadcast soil application. Incorporate into top 4 to 6 inches of soil. Claims for control are limited to reduction of feeding damage.

O,O-DIETHYL O-[p-(METHYLSULFINYL)PHENYL] PHOSPHOROTHIOATE

	Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
003AA	Tobacco		N.F. Banded soil application (preplant) through 3 ounces per 1,000 feet of row. Broadcast soil application (preplant) through 2 pounds per acre.
AVAAA	Wireworms	3 oz/1,000 ft row [with any row spacing] (10-15% G) (6 lb/gal EC)	Preplant soil application (band). Apply in a 10 to 12 inch band. Incorporate into top 2 to 3 inches of soil.
		2 lb/A (10-15% G) (6 lb/gal EC)	Preplant broadcast soil application.
	ORNAMENTALS		
	(Lawns and Turf (including ground covers))		
30100A	Lawns		
30080A	Ornamental Turf		Do not make application to newly seeded areas. Treated turf should not be cut for sod, or sod handled for 30 days after treatment. Immediately after treatment, drench grass thoroughly by applying 0.25 to 0.5 inch of water.
ASDUA	Billbugs	1.65-3.35 pt 63% EC/25-50 gal/5,000 sq.ft (63% EC)	Use limited to FL.
ALAEA	Chinch bug		Application to established lawns and turf. Use the high rate for billbugs.
BPAGA	European chafer	4.6-4.7 oz/ 5,000 sq.ft (10-15% G)	Application to established lawns and turf.
BPAZC	Japanese beetle (larvae)	4.6-4.7 oz/ 5,000 sq.ft (10-15% G)	Use limited to OH. Application to established lawns and turf.
BPANA	Northern masked chafer		

O,O-DIETHYL O-[p-(METHYLSULFINYL)PHENYL] PHOSPHOROTHIOATE

Listing of Registered Pesticide Products by Formulation

90% technical chemical
O,O-diethyl O-[p-(methylsulfinyl)phenyl] phosphorothioate (032701)
003125-00171

10% granular
O,O-diethyl O-[p-(methylsulfinyl)phenyl] phosphorothioate (032701)
003125-00164 003125-00196

15% granular
O,O-diethyl O-[p-(methylsulfinyl)phenyl] phosphorothioate (032701)
003125-00213

6 lb/gal emulsifiable concentrate
O,O-diethyl O-[p-(methylsulfinyl)phenyl] phosphorothioate (032701)
003125-00163

63% emulsifiable concentrate
O,O-diethyl O-[p-(methylsulfinyl)phenyl] phosphorothioate (032701)
003125-00195

State Label Registrations

CA Reg. No.
009876-04611

GA Reg. No.
003125-07835 003125-07836 006735-08177

ID Reg. No.
003125-07834

OR Reg. No.
003125-07859

TX Reg. No.
000557-09579 000557-09580 000557-09581 000557-09582
000557-09583 000557-09584 000557-09585 000557-09586
000557-09587 000557-09588 000557-09589 000557-09590
000557-09591 000557-09592 000557-09695

WA Reg. No.
003125-07828

O,O-DIETHYL O-[p-(METHYLSULFINYL)PHENYL] PHOSPHOROTHIOATE* c032701

TYPE PESTICIDE: Nematicide (Refer also to Insecticide Index Entry)

FORMULATIONS: G (7.5%, 10%, 13.35%, 15%); EC (3 lb/gal or 32%, 4 lb/gal or 43%, 6 lb/gal or 63%)

GENERAL WARNINGS AND LIMITATIONS: Do not use in or near human dewellings. The emulsifiable concentrate formulations are restricted use pesticides. Do not treat food crops grown in greenhouses, or apply to plant foliage other than commercial turf. Wear a pesticide respirator approved by the Mining Enforcement and Safety Administration and by the National Institute for Occupational Safety and Health under the provision of 30 CFR part 11. Wear protective clothing and cotton or natural rubber gloves. Do not apply with a knapsack or similar equipment that is placed on the user's body. Keep all unprotected persons out of the operating area or vicinity particularly until spray has been thoroughly drenched into or covered by soil, and all mist has dissipated. The active ingredient kills nematodes by contact action, and therefore should be mixed thoroughly into the soil to obtain maximum control. Dosages are expressed as weight actual (unless otherwise specified).
Agricultural Crop Tolerance: See listing at individual crop sites. Also for crops with non-nematicidal uses as follows: 0.05 ppm in or on beets, sugar and beets, sugar, tops; also pineapple and pineapple forage. 0.1 ppm in or on onions, potatoes, rutabagas roots and sorghum grain. 1.0 ppm in or on sorghum fodder and sorghum forage.
Livestock Tolerances: 0.02 ppm in the fat, meat byproducts, and meat of cattle, goats, hogs, horses, and sheep.

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations	
AGRICULTURAL CROPS			
General Warnings and Limitations: Where row spacing is extremely narrow, do not place treated zones (band or furrow) closer together than 6 inches. Plant in the middle of the band.			
Banana Plantain		0.02 ppm 60 day preharvest interval through 0.23 ounce per plant.	/06002AA /06016AA

*Dasanit
fensulfothion
O,O-Diethyl O-[4-(methylsulfinyl)phenyl] phosphorothioate

O,O-DIETHYL O-[p-(METHYLSULFINYL)PHENYL] PHOSPHOROTHIOATE*

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations	
Banana (continued)			
Burrowing nematode Reniform nematode Spiral nematodes	0.15-0.23 oz/ plant (15% G)	Use limited to PR. Soil application (at-planting). Apply uniformly around the base of each plant in a 2 to 2.5 foot band using suitable granular applicator equipment such as a shaker can. Mix with covering soil. Repeat at 6 month intervals. Incorporate post planting by mixing to a depth of 2 inches.	NEJBCBA NEHBBBA NEGABAA
Citrus Fruits (seedlings)		N.F.	/02000DA
Nematodes	4.0-6.0 oz/ 50 gal water (6 lb/gal or 63% EC)	RESTRICTED USE PESTICIDE. Dip treatment on nursery stock. Remove soil from roots of plants and immerse only the root systems into the solution (approximately 575 to 860 ppm active ingredient). Allow roots to soak for 30 minutes then remove for planting or shipment. Treated plants to be moved into commercial trade within 1 week after dipping must bear warning tags stating appropriate precautions for this formulation.	NABAAAA
	2.25-4.5 oz/ 25 gal water (6 lb/gal or 63% EC)	RESTRICTED USE PESTICIDE. Containerized plant treatment. Apply 0.33 pint of finished solution per 8 inch pot. Do not apply to dry pots or to plants in a wilted condition.	
Corn, Field Corn, Pop Corn, Sweet		0.1 ppm grain, also for sweet corn, fresh (kernel, plus cob with husk removed). 1.0 ppm forage-fodder At-planting soil application through 2.03 pounds per acre.	/28006AA /15004AA /15005AA

O,O-DIETHYL O-[p-(METHYLSULFINYL)PHENYL] PHOSPHOROTHIOATE

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations	
Corn, Field (continued)			
Sting nematodes			NEBBAAA
Stubby root nematodes			NCAABAA
	2.2 oz/1,000 ft of row or 2.03 lb/A (using 36 inch row spacing) (10% G) (15% G)	Use limited to Southeastern States. Soil application (at-planting). Apply in a 12 inch band over the row in front of the planter shoe and incorporate to 3 inches.	
Cotton		0.02 ppm cottonseed. At-planting soil application through 6.5 pounds per acre. Do not use foliage for feed or forage.	/28007AA
Nematodes	4.0-8.0 oz/ 1,000 ft row or 3.25-6.5 lb/A (using 40 inch row spacing) (10% G) (15% G)	Use limited to Southeastern and Gulf States. Soil application (at-planting). Apply in a 12 inch band. Disc or till thoroughly to a depth of 4 to 6 inches.	NABAAAA
Peanuts		0.05 ppm Preplant soil application through 6.0 pounds per acre. Do not feed vines or hay.	/28015AA
Nematodes	2.2-4.4 oz/ 1,000 ft row or 2.0-4.0 lb/A (using 36 inch row spacing) or 3.0-6.0 lb/A (broadcast) (10% G) (15% G)	Preplant soil application. Apply in a 12 to 18 inch band over the row, or broadcast. Disc or till thoroughly to a depth of 4 to 6 inches.	NABAAAA

O,O-DIETHYL O-[p-(METHYLSULFINYL)PHENYL] PHOSPHOROTHIOATE

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations	
Peanuts (continued)	2.25-4.5 oz/ 1,000 ft row or 2.03-4.05 lb/A (using 36 inch row spacing) 3.0-6.0 lb/A (broadcast) (6 lb/gal or 63% EC)	RESTRICTED USE PESTICIDE. Preplant soil application. Apply in a 12 to 18 inch band over the row, or broadcast. Disc or till thoroughly to a depth of 4 to 6 inches.	
Plantain (see Banana)			
Soybeans		0.02 ppm soybeans, 0.1 ppm soybeans forage. At-planting soil application through 1.8 pounds per acre.	/28023AA
Nematodes (except cyst nematodes)	1.0-2.0 oz/ 1,000 ft row or 0.9-1.8 lb/A (using 36 inch row spacing) (7.5% G) (10% G) (15% G) (3 lb/gal or 32% EC)	Soil application (at-planting). For granular formulation: Apply in a 12 inch band. Disc or till thoroughly to 4 to 6 inches depth. For emulsifiable concentrate formulation: Apply as a water emulsion spray in a 4 to 6 inch band over the seed furrow behind the planter shoe and in front of the press wheel. Do not apply directly on the seed. Do not cut green crop or use dry vine for feed or forage. May be formulated with O,O-Diethyl S-[2-(ethylthio)ethyl] phosphorodithioate.	NABABAA
Sugarcane		0.02 ppm At-planting seed piece treatment through 5.0 pounds per acre.	/25003AA
Nematodes	0.23-0.57 lb/ 1,000 ft row or 2.0-5.0 lb/A (using 5 foot row spacing) (10% G) (15% G)	Use limited to FL. Seed piece treatment. Apply in a 12 to 18 inch band in the open furrow over the seed pieces at planting.	NABAAAA

O,O-DIETHYL O-[p-(METHYLSULFINYL)PHENYL] PHOSPHOROTHIOATE

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations	
Sweet Potato		0.05 ppm Preplant soil application through 7.0 pounds per acre.	/14018?
Nematodes	3.0-7.0 lb/A (broadcast) (10% G) (15% G)	Preplant soil application. Apply using the higher rate for fields with a high population of nematodes or a history of serious nematode damage, then plant in the usual manner. Disc or till thoroughly to a depth of 4 to 6 inches.	NABAAA?
Root-knot Nematodes	3.0-7.0 lb/A (broadcast) (6 lb/gal or 63% EC)	RESTRICTED USE PESTICIDE. Preplant soil application. Apply uniformly using the higher rate for fields with a high population of nematodes or a history of serious nematode damage, then plant in the usual manner. Disc or till thoroughly to a depth of 4 to 6 inches.	NEOBCA?
Tobacco			/26003A
Nematodes	6.0-9.0 oz/ 1,000 ft row or 4.0-6.0 lb/A (using 48 inch row spacing) or 6.0-10.0 lb/A (broadcast) (10% G) (13.35% G) (15% G)	Preplant soil application. For row treatment, apply the lower rate in a 10 to 12 inch band. Under conditions of high nematode populations, apply the higher rate in a 16 inch band. For broadcast treatment, make application, disc or till thoroughly to a depth of 3 to 6 inches, then bed-up over the row and plant as usual. May be formulated with S-Propyl butylethylthiocarbamate.	NABAAAA

O,O-DIETHYL O-[p-(METHYLSULFINYL)PHENYL] PHOSPHOROTHIOATE

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations	
Tobacco (continued)			
	6.0-9.0 oz/ 1,000 ft row or 4.0-6.0 lb/A (using 48 inch row spacing) (6 lb/gal or 63% EC)	RESTRICTED USE PESTICIDE. Preplant soil application. Apply at the low rate in a 10 to 12 inch band. Under conditions of high nematode population pressure, apply at the high rate in a 16 inch band. Disc or till thoroughly to a depth of 4 to 6 inches.	
	9.0 oz/ 1,000 ft row (using 48 inch row spacing) or 4.0-6.0 lb/A (7.5% G) (10% G) (4.0 lb/gal or 43% EC) (3.0 lb/gal or 32% EC)	RESTRICTED USE PESTICIDE. Preplant soil application. Apply in water emulsion or in liquid fertilizer or apply granular dry in a 10 to 12 inch band over the row or as a broadcast application before planting. Disc or till thoroughly to a depth of 4 to 6 inches to insure adequate mixing in the soil. Plant crop in the usual manner. Apply only once per season. Formulated with O,O-Diethyl S-[2-(ethylthio)ethyl] phosphorodithioate.	
Tomato		0.1 ppm Preplant soil application through 20.1 pounds per acre.	/11005A/
Nematodes	3.68-7.36 oz/ 1,000 ft row or 3.16-6.33 lb/ A (using 38 inch row spacing) or 10.0-20.1 lb/A (broadcast) (10% G) (15% G)	Preplant soil application. Apply in a 12 inch band over the row, or broadcast. Disc or till thoroughly to a depth of 4 to 6 inches.	NABAAAA

O,O-DIETHYL O-[p-(METHYLSULFINYL)PHENYL] PHOSPHORTHIOATE

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
Tomato (continued)		
	3.75-7.12 oz/ 1,000 ft row or 3.2-6.25 lb/A (using 38 inch row spacing) or 10.0-20.0 lb/A (broadcast) (6 lb/gal or 63% EC)	RESTRICTED USE PESTICIDE. Preplant soil application. Apply in a 12 inch band over the row, or broadcast. Disc or till thoroughly to a depth of 4 to 6 inches.

ORNAMENTALS

(Ornamental Plants (herbaceous plants and bulbs; woody shrubs, trees and vines))

General Warnings and Limitations: Do not apply to Aucuba species, begonia, hydrangea, or peony. Do not plant seed in areas treated with granular formulations until safety to germinating seeds has been established. Do not apply emulsifiable concentrate to newly seeded areas until plants have developed good root systems.

Ornamental Herbaceous Perennial Plants (aloe, butterfly iris, century plant, chrysanthemum, cyclamen, easter lily, gladiolus. /31006AA

Ornamental Woody Shrubs and Vines (ardisia, azalea, blue mist, bougainvillea, boxwood, camellia, Chinese hibiscus, croton, dwarf yaupon, dwarf Japanese holly, euonymus, eurya, gallberry, gardenia, holly leaf osmanthus, honeysuckle, Japanese yew, jasmine, jungleflame, juniper, mabonia (California barberry), metrosideros, natal plum, privet, pyracantha, red leaf barberry, roses, surinam cherry, viburnum, and yew) /34000AA

O,O-DIETHYL O-[p-(METHYLSULFNYL)PHENYL] PHOSPHOROTHIOATE

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
ORNAMENTALS (continued)		
Ornamental and/or Shade Trees (American holly, christmasberry, cypress, Japanese plum, laurel cherry, magnolia, and Russian olive)		/35000
Nematodes		NABAAA
	1.01 lb/1,000 sq. ft (10% G) (15% G)	Preplant soil application to nursery stock. Apply as a treatment evenly over bed or bench area and work thoroughly into the soil to a depth of 4 to 6 inches. Do not apply to newly seeded areas.
	0.94-1.88 lb/ 1,000 sq. ft (6 lb/gal or 63% EC)	RESTRICTED USE PESTICIDE. Soil application to nursery stock. As a preplant treatment, apply in sufficient water to distribute the formulation evenly over beds and benches. Apply the lower rate for postplant treatment of seedlings. If the solution comes in contact with plant foliage, rinse immediately with fresh water. follow this application with additional water to wet the soil to a depth of 4 to 6 inches. Repeat application in 4 to 6 months if soil becomes reinfested.
	3.0-6.0 oz/ 60 gal water (6 lb/gal or 63% EC)	RESTRICTED USE PESTICIDE. Dip treatment to nursery stock. Remove soil from roots and immerse only the root system into the solution (375 to 750 ppm active ingredient). Allow to soak for 30 minutes, then remove for planting or shipment. Treated plants to be moved into commercial trade within 1 week after dipping must bear warning tags stating appropriate precautions for this formulation.

O,O-DIETHYL O-[p-(METHYLSULFINYL)PHENYL] PHOSPHOROTHIOATE

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitations
ORNAMENTALS (continued)		
	0.05 oz/ cu. ft soil (10% G) (15% G)	Preplant soil application to nursery stock potting soil. Thoroughly mix into the soil.
	3.0 oz/100 gal water or 0.5 tsp formulation/ 2 gal water (6 lb/gal or 63% EC)	RESTRICTED USE PESTICIDE. Soil application to containerized plants. Apply 0.5 pint of finished solution per 6 inch pot.
Caladium (tubers)		/31047DA
Nematodes	0.75 oz/5.5 gal water or 2.0 tbls formulation/ 5.5 gal water (6 lb/gal or 63% EC)	RESTRICTED USE PESTICIDE. Dip treatment to nursery stock tubers. Soak the tubers for 4 to 6 hours in the solution (approximately 1,000 ppm active ingredient), then remove and allow to drain dry before further handling or processing. Treated tubers to be moved into commercial trade within 1 week after dipping must bear warning tags stating appropriate precautions for this formulation.
(Lawns and Turf (including ground covers))		
General Warnings and Limitations: Thorough watering is required for best results. Consult a State Agricultural Cooperative Extension Service for timing and initial application. Do not treat newly seeded areas. Do not cut treated turf for sod nor handle sod for 30 days after treatment.		
Ornamental Turf (commercial turf such as in cemeteries, golf courses, and sod farms)		/33008AA

O,O-DIETHYL O-[p-(METHYLSULFINYL)PHENYL] PHOSPHOROTHIOATE

Site and Pest	Dosages and Formulation(s)	Tolerance, Use, Limitaitons
Ornamental Turf (continued)		
Nematodes	0.23-0.47 lb/ 1,000 sq. ft or 10.0-20.1 lb/ A (ca) (10% G) (15% G)	Soil application. Distribute evenly over the turf area. Immediately following treatment, apply 0.25 to 0.5 inch of water to drench the formulations into the soil. NABAAA
	0.25-0.5 lb/ 1,000 sq. ft or 10.8-21.6 lb/ A (ca) (6 lb/gal or 63% EC)	RESTRICTED USE PESTICIDE. Use limited to FL. Soil application. Apply in 5 to 10 gallons of water. Drench grass thoroughly after treatment by applying 0.25 to 0.5 inch of water. Recommended for use on bahiagrass, bermudagrass, centipedegrass, St. Augustinegrass and zoysiagrass.

O,O-DIETHYL O-[p-(METHYLSULFINYL)PHENYL] PHOSPHOROTHIOATE

Listing of registered Pesticide Products by Formulation (Nematicides)

7.5% granular

O,O-Diethyl O-[p-(methylsulfinyl)phenyl] phosphorothioate (032701)
plus O,O-Diethyl S-[2-(ethylthio)ethyl] phosphorodithioate (032501)
003125-00252

10% granular

O,O-Diethyl O-[p-(methylsulfinyl)phenyl] phosphorothioate (032701)
003124-00164 003124-00196

O,O-Diethyl O-[p-(methylsulfinyl)phenyl] phosphorothioate (032701)
plus S-Propyl butylethylthiocarbamate (041503)
000476-02146 003125-00291

O,O-Diethyl O-[p-(methylsulfinyl)phenyl] phosphorothioate (032701)
plus O,O-Diethyl S-[2-(ethylthio)ethyl] phosphorodithioate (032501)
003125-00300 003743-00345

13.35% granular

O,O-Diethyl O-[p-(methylsulfinyl)phenyl] phosphorothioate (032701)
plus S-Propyl butylethylthiocarbamate (041503)
000476-02147 003125-00290

15% granular

O,O-Diethyl O-[p-(methylsulfinyl)phenyl] phosphorothioate (032701)
003125-00213

32% (3 lb/gal) emulsifiable concentrate

O,O-Diethyl O-[p-(methylsulfinyl)phenyl] phosphorothioate (032701)
plus O,O-Diethyl S-[2-(ethylthio)ethyl] phosphorodithioate (032501)
003125-00279

43% (4 lb/gal) emulsifiable concentrate

O,O-Diethyl O-[p-(methylsulfinyl)phenyl] phosphorothioate (032701)
plus O,O-Diethyl S-[2-(ethylthio)ethyl] phosphorodithioate (032501)
003125-00299

63% (6 lb/gal) emulsifiable concentrate

O,O-Diethyl O-[p-(methylsulfinyl)phenyl] phosphorothioate (032701)
003125-00163 003125-00195

O,O-DIETHYL O-[p-(METHYLSULFINYL)PHENYL] PHOSPHOROTHIOATE

State Label Registrations

CT Reg. No.
001258-08638 001258-08639 001258-08640

GA Reg. No.
003125-07835 003125-07836 006735-08175 006735-08177
009876-04611

ID Reg. No.
003125-07834

OR Reg. No.
003125-07859

SD Reg. No.
003743-07017

TX Reg. No.
000557-09579 000557-09580 000557-09581 000557-09582
000557-09583 000557-09584 000557-09585 000557-09586
000557-09587 000557-09588 000557-09589 000557-09590
000557-09591 000557-09592 000557-09695

WA Reg. No.
003125-07828

II. REQUIREMENT FOR SUBMISSION OF GENERIC DATA

A. This portion of the guidance document is a Notice issued under the authority of FIFRA Section 3(c)(2)(B) and describes, in table format, the data required for maintaining the registrability of each product. Additionally, a bibliography (Appendix II-1) is included that identifies that data considered as part of the data base supporting this standard. EPA has determined that additional generic data described in this Notice must be submitted to EPA for evaluation in order to maintain in effect the registration(s) of your product(s) identified as an attachment to the cover letter accompanying this guidance document. As required by FIFRA Section 3(c)(2)(B), you are required to take appropriate steps to comply with this Notice.

EPA may suspend the registration of each of those products unless, within the specified time, you have informed EPA how you will satisfy the requirements of this Notice. Any such suspension will remain in effect until you have complied with the terms of this Notice.

B. What Generic Data 1/ Must Be Submitted. You may ascertain which generic data you must submit by consulting Table A at the end of this chapter. That table shows all the generic data needed to evaluate the continued registrability of all products, and the dates by which the data must be submitted. The required data must be submitted and any necessary studies must be conducted in accordance with EPA-approved protocols, the Pesticide Registration Guidelines 2/, or data collected under the approved protocols of the Organization for Economic Cooperation and Development (OECD). If you wish not to develop data which are necessary to support the registration or reregistration of certain uses appearing in your labeling, you may delete those uses at the time you submit your revised labeling.

Also for certain kinds of testing (generally ecological effects), EPA requires the test substance to be a "typical formulation," and in those cases EPA needs data of that

---

1/ Generic data pertain to the properties or effects of a particular ingredient, and thus are relevant to an evaluation of the risks of all products containing that ingredient (or all such products having a certain use pattern), regardless of any such product's unique composition or use. Product-specific data relate only to the properties or effects of a product with a particular composition (or a group of products with closely similar composition).

2/ The Pesticide Registration Guidelines were reproposed on November 24, 1982 in 47 Federal Register 53192.

type for each major formulation category (e.g., emulsifiable concentrates, wettable powders, granulars, etc.) These are classified as generic data and when needed are specified in Table A. EPA may possess data on certain "typical formulations" but not others. Note: The "typical formulation" data should not be confused with product-specific data (Table B) which are required on each formulation. Product-specific data are further explained in Chapter IV of this document.

C. Options Available for Complying With Requirements to Submit Data

Within 90 days of your receipt of this Notice you must submit to EPA a completed copy of the form entitled "FIFRA Section 3(c)(2)(B) Summary Sheet" [EPA Form 8580-1, Appendix II-2] for each of your products. On that form you must state which of the following methods you will use to comply with the requirements of this Notice:

1. (a) Notify EPA that you will submit the data, and

   (b) either submit the existing data you believe will satisfy the requirement, or state that you will generate the data by conducting testing. If the test procedures you will use deviate from (or are not specified in) the Registration Guidelines or protocols contained in the Reports of Expert Groups to the Chemicals Group, Organization for Economic Cooperation and Development (OECD) Chemicals Testing Programme, you must enclose the protocols you will use.

2. Notify EPA that you have entered into an agreement with one or more other registrants to jointly develop (or share in the cost of developing) the data. If you elect this option, you must notify EPA which registrant(s) are parties to the agreement.

3. File with EPA a completed "Certification of Attempt to Enter Into an Agreement With Other Registrants for Development of Data" (EPA Form 8580-6, Appendix II-3)*/

4. Request that EPA amend your registration by deleting the uses for which the data are needed. (This option is not available to applicants for new products.)

---

*/ FIFRA Section 3(c)(2)(B) authorizes joint development of data by two or more registrants, and provides a mechanism by which parties can obtain an arbitrator's decision if they agree to jointly develop data but fail to agree on all the terms of the agreement. The statute does not compel any registrant to agree to develop data jointly.
(Footnote continued at bottom of next page)

5. Request voluntary cancellation of the registration(s) of your products for which the data are needed. (This option is not available to applicants for new products.)

D. Procedures for Requesting Changes in Testing Methodology and Extensions of Time

EPA recognizes that you may disagree with our conclusions regarding the appropriate ways to develop the required data or how quickly the data must be submitted. If the test procedures you plan to use deviate from (or are not specified in) the registration guidelines or protocols contained in the reports of the Expert Groups to the Chemical Groups, Organization for Economic Cooperation and Development (OECD) Chemicals Testing Programme, you must submit the protocol for Agency review prior to the initiation of the test.

If you think that you will need more time to generate the required data than is allowed by EPA's schedule, you may submit a request for an extension of time. The extension request must be submitted in writing to the Product Manager. The extension request should state the reasons why you conclude that an extension is appropriate. While EPA considers your request, you must strive to meet the deadline for submitting the required data.

(Footnote continued from previous page)

In EPA's opinion, joint data development by all registrants who are subject to the requirements to submit a pertinent item of data or a cost-sharing agreement among all such registrants is clearly in the public interest. Duplication of testing could increase costs, tie up testing facilities, and subject an unnecessarily large number of animals to testing.

As noted earlier, EPA has discretion not to suspend the registration of a product when a registrant fails to submit data required under FIFRA Section 3(c)(2)(B). EPA has concluded that it is appropriate to exercise its discretion not to suspend in ways which will discourage duplicative testing. Accordingly, if (1) a registrant has informed us of his intent to develop and submit data required by this Notice; and (2) a second registrant informs EPA that it has made a bona fide offer to the first registrant to share in the expenses of the testing [on terms to be agreed upon or determined by arbitration under FIFRA Section 3(c)(2)(B)(iii)]; and (3) the first registrant has declined to agree to enter into a cost-sharing agreement, EPA will not suspend the second firm's registration. While the first firm is not required to agree to jointly develop data, EPA is not required to force the second firm to engage in economically inefficient duplicative testing in order to maintain its registration.

TABLE A

GENERIC DATA REQUIREMENTS FOR FENSULFOTHION[1/]

Data Requirement	Composition[2/]	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA Section 3(c)(2)(B)?[3/]
§158.120 Product Chemistry				
Product Identity:				
61-1 - Identity of Ingredients	TGAI	Yes	4/	No
61-2 - Description of Beginning Materials and Manufacturing Process	TGAI	No	-	Yes[5/]
61-3 - Discussion of Formation of Impurities	TGAI	No	-	Yes[6/]
Analysis and Certification of Product Ingredients				
62-1 - Preliminary Analysis	TGAI	No	-	Yes[7/]
Physical and Chemical Characteristics				
63-2 - Color	TGAI	Yes	GS0107001*	No
63-3 - Physical State	TGAI	Yes	GS0107001*	No
63-4 - Odor	TGAI	No	-	Yes
63-5 - Melting Point	N/A[8/]	N/A		No
63-6 - Boiling Point	TGAI	Yes	GS0107001*	No
63-7 - Density, Bulk Density, or Specific Gravity	TGAI	Yes	GS0107001*	No

TABLE A

GENERIC DATA REQUIREMENTS FOR FENSULFOTHION[1/]

Data Requirement	Composition[2/]	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA Section 3(c)(2)(B)?[3/]
§158.120 Product Chemistry (continued)				
63- 8 - Solubility	TGAI or PAI	Partially	GS0107001**	Yes[9/]
63- 9 - Vapor Pressure	PAI	No	-	Yes
63-10 - Dissociation constant	PAI	No	-	Yes
63-11 - Octanol/water partition coefficient	PAI	No	-	Yes
63-12 - pH	TGAI	No	-	Yes
63-13 - Stability	TGAI	No	GS0107002*[a/]	No
Other Requirements:				
64- 1 - Submittal of samples	N/A	N/A		

1/ The 90% technical (T), EPA Reg. No. 3125-171, also serves as a manufacturing-use product.
2/ Composition: TGAI = technical grade of the active ingredient; PAI = pure active ingredient
3/ Data must be submitted no later than 6 months from the date of this Standard.
4/ Data on the manufacturing-use technical, EPA Reg. No. 3125-171, included with a confidential ingredient statement for EPA Reg. No. 3125-213 dated December 16, 1974 submitted by Chemagro Agricultural Division, MOBAY Chemical Corporation and received by EPA January 9, 1975.
5/ The Manufacturing process for the 90% technical must be submitted. This must include the name and address of the manufacturer or producer of each starting material, the purities of starting materials and intermediates and descriptions of the reaction conditions, any purification steps, and quality control measures.

6/ A discussion is required for each impurity believed to be present at greater than 0.1%, based on knowledge of the beginning materials, all possible chemical reactions, and any contamination.
7/ Five or more representative samples should be analyzed for the amount of active ingredient and each impurity present for which a certified limit is required.
8/ Not required because the 90% technical is a liquid at room temperature.
9/ Solubility data should be submitted that is expressed in terms of g/100 ml of solvent at 20°C (68°F) or in terms such as ppm (mg/kg). This data should also indicate the temperature at which the test was performed.

* Study on its own fulfills Guideline requirements.

** Study must be combined with other studies to fulfill Guideline requirements.

a/ Studies submitted by MOBAY Chemical Corporation. These studies may be compensable.

TABLE A

GENERIC DATA REQUIREMENTS FOR FENSULFOTHION

Data Requirements	Composition[1/]	Does EPA Have Data To Satisfy This Requirement? (Yes, No, or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA Section 3(c)(2)(B)?[2/]
§158.125 Residue Chemistry				
171-4 - Nature of Residue (Metabolism)				
- Plants	PAIRA	Yes	GS0107003** GS0107004** GS0107005** GS0107006**	No
- Livestock	PAIRA and plant metabolites	Yes	GS0107006** GS0107007**	No
171-4 - Residue Analytical Method				
- Plant residues	TGAI and metabolites	Yes	00094326** GS0107005** GS0107006** GS0107008** GS0107009** GS0107010** GS0107011** GS0107012** GS0107013** GS0107014** GS0107015** GS0107016** GS0101017**a/ GS0107018** GS0107019**a/ GS0107020** GS0107021**a/ GS0107022**a/	No

TABLE A

GENERIC DATA REQUIREMENTS FOR FENSULFOTHION

Data Requirements	Composition[1/]	Does EPA Have Data To Satisfy This Requirement? (Yes, No, or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA Section 3(c)(2)(B)?[2/]
§158.125 Residue Chemistry (continued)				
171-4 - Residue Analytical Method (continued)				
- Animal residues	TGAI and metabolites	Yes	GS0107005** GS0107006** GS0107008** GS0107009** GS0107010** GS0107015** GS0107021**a/	No
171-4 - Storage Stability Data	PAI	Partially	GS0107020**a/	Yes[3/]
171-4 - Magnitude of the Residue-Residue Studies for Each Food Use				
- Crop Group #1 - Root and Tuber Vegetables[4/]				
o Crop 1 - Potatoes				
-- Crop field trials	TEP	Yes	GS0107008** GS0107018**	No
-- Processed Food/Feed	TEP	No	-	Yes[5/]
o Crop 2 - Rutabagas				
-- Crop field trials	TEP	Yes	GS0107016*	No

TABLE A

GENERIC DATA REQUIREMENTS FOR FENSULFOTHION

Data Requirement	Composition[1/]	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA Section 3(c)(2)(B)?[2/]
§158.125 Residue Chemistry (continued)				
171-4 - Magnitude of the Residue - Residue Studies (continued)				
- Crop Group #1 - Root and Tuber Vegetables (continued)				
o Crop 3 - Sugar Beets				
-- Crop field trials	TEP	Yes	GS0107005** GS0107015** GS0107018**	No
-- Processed Food/Feed	TEP	Yes	GS0107005** GS0107015** GS0107018**	No
o Crop 4 - Sweet Potatoes				
-- Crop field trials	TEP	Yes	GS0107020*[a/]	No
- Crop Group #2 - Leaves of Root and Tuber Vegetable Group[6/]				
o Crop 1 - Sugar Beet Tops				
-- Crop field trials	TEP	Yes	GS0107005** GS0107015**	No
- Crop Group #3 - Bulb Vegetables Group[7/]				
o Crop 1 - Onions (dry bulb)				
-- Crop field trials	TEP	Yes	GS0107023*	No

TABLE A

GENERIC DATA REQUIREMENTS FOR FENSULFOTHION

Data Requirement	Composition[1/]	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA Section 3(c)(2)(B)?[2/]
§158.125 Residue Chemistry (continued)				
171-4 - Magnitude of the Residue - Residue Studies (continued)				
- Crop Group #4 - Legume Vegetables Group[8/]				
o Crop 1 - Soybeans				
-- Crop field trials	TEP	Yes	GS0107019*[a/]	No
- Crop Group #5 - Foliage of Legume Vegetables Group[9/]				
o Crop 1 - Soybean Forage				
-- Crop field trials	TEP	Yes	GS0107019*[a/]	No
-- Processed Food/Feed	TEP	Yes	GS0107019*[a/]	No[10/]
- Crop Group #6 - Fruiting Vegetables (except cucurbits) Group[11/]				
o Crop 1 - Tomatoes				
-- Crop field trials	TEP	Yes	GS0107008*	No
-- Processed Food/Feed	TEP	Yes	GS0107008*	No
- Crop Group #7 - Cereal Grains Group[12/]				
o Crop 1 - Corn (grain, fresh: sweet, pop-, field [K+CWHR])				
-- Crop field trials	TEP	Yes	GS0107008** GS0107020**[a/]	No
-- Processed Food/Feed	TEP	Yes	GS0107008** GS0107020**[a/]	No[13/]

TABLE A

GENERIC DATA REQUIREMENTS FOR FENSULFOTHION

Data Requirement	Composition[1/]	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA Section 3(c)(2)(B)?[2/]
§158.125 Residue Chemistry (continued)				
171-4 - Magnitude of the Residue - Residue Studies (continued)				
- Crop Group #7 - Cereal Grains Group[12/] (continued)				
o Crop 2 - Sorghum				
-- Crop field trials	TEP	Yes	GS0107022*[a/]	No
-- Processed Food/Feed	TEP	Yes	GS0107022*[a/]	No[14/]
- Crop Group #8 - Forage, Fodder, and Straw of Cereal Grains Group[15/]				
o Crop 1 - Corn forage and fodder				
-- Crop field trials	TEP	Yes	GS0107008** GS0107020**[a/]	No
o Crop 1 - Sorghum forage and fodder				
-- Crop field trials	TEP	Yes	GS0107022*[a/]	No
- Crop Group #9 - Miscellaneous Commodities				
o Crop 1 - Bananas				
-- Crop field trials	TEP	Partially	GS0107012**	Yes[16/]

TABLE A

GENERIC DATA REQUIREMENTS FOR FENSULFOTHION

Data Requirement	Composition[1/]	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA Section 3(c)(2)(B)?[2/]
§158.125 Residue Chemistry (continued)				
171-4 - Magnitude of the Residue - Residue Studies (continued)				
- Crop Group #9 - Miscellaneous Commodities (continued)				
o Crop 2 - Cottonseed				
-- Crop field trials	TEP	Yes	GS0107019*[a/]	No
-- Processed Food/Feed	TEP	Yes	GS0107019*[a/]	No[17/]
o Crop 3 - Peanuts and Peanut hulls				
-- Crop field trials	TEP	Partially	GS0107005** GS0107022**[a/]	Yes[18/]
-- Processed Food/Feed	TEP	No	-	Yes[18/]
o Crop 4 - Pineapples (fruit and forage)				
-- Crop field trials	TEP	Yes	GS0107014*	No
-- Processed Food/Feed	TEP	Yes	GS0107014*	No[19/]
o Crop 5 - Plantains				
-- Crop field trials	TEP	Partially	GS0107012**	No[20/]
o Crop 6 - Sugarcane				
-- Crop field trials	TEP	Yes	GS0107018*	No
-- Processed Food/Feed	TEP	Yes	GS0107018*	No[21/]

TABLE A

GENERIC DATA REQUIREMENTS FOR FENSULFOTHION

Data Requirement	Composition[1/]	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA Section 3(c)(2)(B)?[2/]
§158.125 Residue Chemistry (continued)				
171-4 - Magnitude of the Residue - Residue Studies (continued)				
- Crop Group #9 - Miscellaneous Commodities (continued)				
o Crop 7 - Tobacco -- Crop field trials	TEP	Yes	00094326** GS0107021**a/ GS0107025**a/	No
- Milk/poultry/eggs	TGAI or plant metabolites	Yes	GS0107010** GS0107021**a/ GS0107024**	No[22/]
- Cattle (meat, fat, MBYP)	TGAI or plant metabolites	Yes	GS0107010** GS0107021**a/ GS0107024**	No
- Goats (meat, fat, MBYP)	TGAI or plant metabolites	Yes	GS0107010** GS0107021**a/ GS0101024**	No
- Hogs (meat, fat, MBYP)	TGAI or plant metabolites	Yes	GS0107010** GS0107021**a/ GS0101024**	No
- Horses (meat, fat, MBYP)	TGAI or plant metabolites	Yes	GS0107010** GS0107021**a/ GS0101024**	No
- Sheep (meat, fat, MBYP)	TGAI or plant metabolites	Yes	GS0107010** GS0107021**a/ GS0101024**	No

1/ Composition: TGAI = Technical grade of the active ingredient; PAIRA = Pure active ingredient, radiolabelled; TEP = Typical end-use product; EP = End-use product.
2/ Data must be submitted no later than January 1987.
3/ Storage stability data pertaining to fensulfothion residues in animal tissues are required.
4/ A crop group tolerance is not appropriate at the present time because residue data are required for two additional members of this crop group (carrot and radish).
5/ Field treated potatoes containing 0.1 ppm residues of fensulfothion and its cholinesterase-inhibiting metabolites must be processed to determine residues in dried potatoes and potato chips and granules.
6/ A crop group tolerance is not appropriate at the present time because residue data are required for one additional member of this crop group (turnip leaves).
7/ A crop group tolerance is not appropriate at the present time because residue data are required for one additional member of this crop group (garlic, leek, or shallot).
8/ A crop group tolerance is not appropriate at the present time because residue data are required for several additional members of this crop group (dried and succulent beans and peas).
9/ A crop group tolerance is not appropriate at the present time because residue data are required for two additional members of this crop group (forage and hay of beans and peas - any variety of each).
10/ Since residues were nondetectable in soybeans, food/feed additive tolerances are not required for residues in processed products of soybeans (oil, meal, or soapstock).
11/ A crop group tolerance is not appropriate at the present time because residue data are required for one additional members of this crop group (peppers).
12/ A crop group tolerance is not appropriate at the present time because residue data are required for two additional members of this crop group (rice and wheat).
13/ Food/feed additive tolerances are no required for processed products of corn because fensulfothion residues were nondetectable (<0.05 ppm) in treated corn.
14/ Food/feed additive tolerances are not required for processed products of sorghum grain since residues were non-detectable (<0.05 ppm) in treated sorghum.
15/ A crop group tolerance is not appropriate at the present time because residue data are required for one additional member of this crop group (wheat)
16/ Field trials conducted in Ecuador and either Honduras, Nicaragua, Guatemala, or Costa Rica using 15% formulations at 0.23 oz ai/plant.
17/ Since residues were nondetectable in cottonseed, food/feed additive tolerances are not required for residues in processed products of cottonseed (oil, meal, or soapstock).
18/ Field trials are required from sites in Texas or Oklahoma using the 6 lb/gal EC formulation at 1.1 oz ai/1,000 feet of row (1 lb ai/A with a 36-inch row spacing) for four postplant basal-directed band soil applications. Sampling should include peanuts and hulls harvested 30 days after the final treament. A fractionation study to determine residues in peanut meal, oil (crude and refined), and soapstock is also required. If residues in excess of that established for the raw agricultural commodity are found, then food/feed additive tolerances must be proposed for these processed products.

19/ Since residues were nondetectable in treated pineapples, food/feed additive tolerances are no required for residues in the processed products of pineapples (bran and juice).
20/ The additional banana data requested (see footnote 16 above) will be translated to support the tolerance for residues in or on platains, therefor no additional data are specifically required for plantain.
21/ Since residues were nondetectable in treated sugarcane, food/feed additive tolerances are not required for residues in processed products of sugarcane.
22/ Category 3 classification [40 CFR §180.6(a)] - no tolerance required

* Study on its own fulfills Guideline requirements.

** Study must be combined with other studies to fulfill Guideline requirements.

a/ Studies submitted by MOBAY Chemical Corporation. These studies may be compensable.

TABLE A

GENERIC DATA REQUIREMENTS FOR FENSULFOTHION

Data Requirement	Composition[1/]	Use Pattern[2/]	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA Section 3(c)(2)(B)?[3/]
§158.130 Environmental Fate					
DEGRADATION STUDIES-LAB:					
161-1 - Hydrolysis	TGAI or PAIRA	A,B	No	-	Yes
Photodegradation					
161-2 - In water	TGAI or PAIRA	A,B	No	-	Yes
161-3 - On soil	TGAI or PAIRA	A	Yes	00094370*[a/]	No
161-4 - In Air	TGAI or PAIRA	A	No	-	No
METABOLISM STUDIES-LAB:					
162-1 - Aerobic Soil	TGAI or PAIRA	A,B	Yes	00044926**[a/] 00044930*[a/] 00073059*[b/] 00094359**[a/]	No
162-2 - Anaerobic Soil	TGAI or PAIRA	A	No	-	Yes
162-3 - Anaerobic Aquatic	TGAI or PAIRA	-	-	-	No

TABLE A

GENERIC DATA REQUIREMENTS FOR FENSULFOTHION

Data Requirement	Composition[1/]	Use Pattern[2/]	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA Section 3(c)(2)(B)?[3/]
§158.130 Environmental Fate (continued)					
162-4 - Aerobic Aquatic	TGAI or PAIRA	-	-	-	No
MOBILITY STUDIES:					
163-1 - Leaching and Adsorption/Desorption	TGAI or PAIRA	A,B	Yes	00044925**a/ 00044927**a/ 00068214*a/ 00079144**a/ 00094363**a/	No
163-2 - Volatility (Lab)	TEP	A	No	-	Yes
163-3 - Volatility (Field)	TEP	A,B	No	-	Yes
DISSIPATION STUDIES-FIELD:					
164-1 - Soil	TEP	A,B	No	-	Yes
164-2 - Aquatic (Sediment)	TEP	-	-	-	No
164-3 - Forestry	TEP	-	-	-	No
164-4 - Combination and Tank Mixes	-	-	-	-	No
164-5 - Soil, Long-term	TEP	A,B	No	-	No[4/]

TABLE A

GENERIC DATA REQUIREMENTS FOR FENSULFOTHION

Data Requirement	Composition[1]/	Use Pattern[2]/	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA Section 3(c)(2)(B)?[3]/
§158.130 Environmental Fate (continued)					
ACCUMULATION STUDIES:					
165-1 - Rotational Crops (Confined)	PAIRA	A	No	-	Yes
165-2 - Rotational Crops (Field)	TEP	A	Partially	00094369**a/	Yes[5]/
165-3 - Irrigated Crops	TEP	-	-	-	No
165-4 - In Fish	TGAI or PAIRA	A,B	Partially	GS0107021**a/	Yes[6]/
165-5 - In Aquatic Non-Target Organisms	TEP	-	-	-	No
§158.140 Reentry Protection[7]/					
132-1 - Foliar Dissipation	TEP	A,B	No	-	Yes
132-1 - Soil Dissipation	TEP	A,B	No	-	Yes
133-3 - Dermal Exposure	TEP	A,B	No	-	Yes
133-4 - Inhalation Exposure	TEP	A,B	No	-	Yes

1/ Composition: TGAI = Technical grade of the active ingredient; PAIRA = Pure active ingredient, radiolabelled; TEP = Typical end-use product.
2/ The use patterns are coded as follows: A=Terrestrial, Food Crop; B=Terrestrial, Non-Food; C=Aquatic, Food Crop; D=Aquatic, Non-Food; E=Greenhouse, Food Crop; F=Greenhouse, Non-Food; G=Forestry; H=Domestic Outdoor; I=Indoor.
3/ Data must be submitted no later than January 1987.
4/ Based upon aerobic soil metabolism data and terrestrial field dissipation studies demonstrating that less than 50% of the fensulfothion initially applied would be present when a subsequent application would be made, the requirement for this test is waived.
5/ A study is needed showing fensulfothion accumulation in field rotational crops grown in sandy loam and treated with a granular formulation.
6/ A study is needed to characterize residues and to show total residues of fensulfothion in edible and visceral tissues on days 0 - 21 of accumulation period and days 1 - 14 of depuration period.
7/ For each crop, the registrant is required to propose an acceptable reenty interval based on one of the following:
(a) the longest (most restrictive) interval for fensulfothion [The most restrictive general reentry interval for for fensulfothion is the 24-hour interval established by the State of California. The most restrictive reentry interval for soil-applied fensulfothion is the seven-day interval established by the State of California.]; or
(b) data on dissipation of foliar and/or soil residues of fensulfothion (decline curve), on human exposure to those residues, and on toxicity of fensulfothion; or
(c) determination of that time beyond which there are no detectable, dislodgeable residues remaining in the worker environment.

* Study on its own fulfills Guideline requirements.

** Study must be combined with other studies to fulfill Guideline requirements.

a/ Studies submitted by MOBAY Chemical Corporation. These studies may be compensable.

b/ Studies submitted by DOW Chemical USA. These studies may be compensable.

TABLE A

GENERIC DATA REQUIREMENTS FOR FENSULFOTHION

Data Requirement	Composition[1/]	Use Pattern[2/]	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA Section 3(c)(2)(B)?[3/]
§158.135 Toxicology					
ACUTE TESTING:					
81-1 - Oral LD_{50} - Rat	TGAI	A,B,F	Yes	00072976*[a/]	No
81-2 - Dermal LD_{50}	TGAI	A,B,F	Yes	00072976*[a/]	No
81-3 - Inhalation LC_{50} - Rat	TGAI	A,B,F	No	-	Yes[4/]
81-7 - Acute Delayed Neurotoxicity - Hen	TGAI	A,B,F	Partially	00094259**	Yes
SUBCHRONIC TESTING:					
82-1 - 90-Day Feeding - Rodent, Non-rodent	TGAI	A,B,F	Partially	00094336** 00094258	Yes[5/]
82-2 - 21-Day Dermal	TGAI	N/R			No
82-3 - 90-Day Dermal	TGAI	N/R			No
82-4 - 90-Day Inhalation - Rat	TGAI	A,B,F	No	-	Yes[6/]
82-5 - 90-Day Neurotoxicity- Hen/Mammal	TGAI	A,B,F	No	-	Provisional[7/]

TABLE A

GENERIC DATA REQUIREMENTS FOR FENSULFOTHION

Data Requirement	Composition[1/]	Use Pattern[2/]	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)?	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA Section 3(c)(2)(B)?[3/]
§158.135 Toxicology (continued)					
CHRONIC TESTING:					
83-1 - Chronic Toxicity - 2 species: Rodent and Non-rodent	TGAI	A,B,F	Partially	00052974** 00052971	Yes[8/]
83-2 - Oncogenicity Study - 2 species: Rat and Mouse preferred	TGAI	A,B,F	Partially	00052974**	Yes[9/]
83-3 - Teratogenicity - 2 species	TGAI	A,B,F	Partially	00049568[a/] 00094915**[a/]	Yes[10/]
83-4 - Reproduction, 2-generation	TGAI	A,B,F	Partially	00047706**	Yes
MUTAGENICITY TESTING					
84-2 - Gene Mutation	TGAI	A,B,F	Partially	05021578**	Yes[11/]
84-2 - Chromosomal Aberration	TGAI	A,B,F	No	-	Yes
84-2 - Other Mechanisms of Mutagenicity	TGAI	A,B,F	Yes	05021578*	No
SPECIAL TESTING					
85-1 - General Metabolism	PAI or PAIRA	A,B,F	Yes	00044918*[a/]	No
85-2 - Domestic Animal Safety	N/R				No

1/ Composition: TGAI = Technical grade of the active ingredient; PAI = Pure active ingredient; PAIRA = Pure active ingredient, radiolabelled
2/ The use patterns are coded as follows: A=Terrestrial, Food Crop; B=Terrestrial, Non-Food; F=Greenhouse, Non-Food
3/ Acute toxicology data must be submitted no later than 6 months from the date of this Standard. All other toxicology data must be submitted no later than January 1987.
4/ The requirement for an acute rat inhalation study may be waived if the registrant agrees to place fensulfothion in Toxicity Category 1.
5/ 2 species required
6/ Required for tobacco use (minimum 21 day inhalation exposure).
7/ Provisional depending on the results of 81-7, Acute delayed neurotoxicity - hen.
8/ 2 species required
9/ 2 species required
10/ 2 species required; additional data has been requested for 00094915 on January 21, 1982.
11/ A gene mutation assay using mammalian cells in culture is required.

* Study on its own fulfills Guideline requirements.

** Study must be combined with other studies to fulfill Guideline requirements.

a/ Studies submitted by MOBAY Chemical Corporation. These studies may be compensable.

TABLE A

GENERIC DATA REQUIREMENTS FOR FENSULFOTHION

Data Requirement	Composition[1]/	Use Pattern[2]/	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA Section 3(c)(2)(B)?[3]
§158.145 Wildlife and Aquatic Organisms					
AVIAN AND MAMMALIAN TESTING					
71-1 - Avian Oral LD_{50}	TGAI	A,B,F	Yes	05003191** 05008363**	No
71-2 - Avian Dietary LC_{50} a.Waterfowl	TGAI	A,B	Yes	00094233*a/	No
b.Upland game		A,B,F	Yes	00094233*a/	No
71-3 - Wild Mammal Toxicity	TGAI	N/A[9]/	N/A[9]/	-	N/A[9]
71-4 - Avian Reproduction	TGAI	A	No	-	Yes[4]/
71-5 - Simulated and Actual Field Testing - Mammals and Birds	TEP	A,B	No	-	Yes[5]/
AQUATIC ORGANISM TESTING					
72-1 - Freshwater Fish LC_{50} a. Warmwater	TGAI	A,B,F	Yes	00078526**a/ 05014941**	No
b. Coldwater	TGAI	A,B	Yes	00078526**a/ GS0107026**	No
a. Warmwater	TEP	A	Yes	00078526**a/ 05014941**	No
b. Coldwater	TEP	A	Yes	00078526**a/ GS0107026**	No

TABLE A

GENERIC DATA REQUIREMENTS FOR FENSULFOTHION

Data Requirement	Composition[1/]	Use Pattern[2/]	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA Section 3(c)(2)(B)?[3]
§158.145 Wildlife and Aquatic Organisms (continued)					
AQUATIC ORGANISM TESTING (continued)					
72-2 - Acute LC_{50} Freshwater Invertebrates	TGAI	A,B,F	No	-	Yes
72-3 - Acute LC_{50} Estuarine and Marine Organisms	TGAI				
a. Shrimp		A,B	Partially	00037809**	Yes[6/]
b. Marine fish		A,B	Partially	00037809**	Yes[6/]
c. Oyster		A,B	Partially	00037809**	Yes[6/]
72-4 - Fish Early Life Stage and Aquatic Invertebrate Life-Cycle	TGAI	A,B	No	-	Yes[7/]
72-5 - Fish Life-Cycle	TGAI	A,B	No	-	Reserved[8/]
72-6 - Aquatic Organism Accumulation	TGAI, PAI or Degradation Product	N/A[9/]	N/A[9/]	-	N/A[9/]
72-7 - Simulated or Actual Field Testing - Aquatic Organisms	TEP	A,B	No	-	Reserved[8/]

1/ Composition: TGAI - Technical grade of the active ingredient; PAI = pure active ingredient; TEP = Typical end-use product

2/ The use patterns are coded as follows: A=Terrestrial, Food Crop; B=Terrestrial, Non-Food Crop; C=Aquatic, Food Crop; D=Aquatic, Non-food; E=Greenhouse, Food Crop; F=Greenhouse, Non-Food; G=Forestry; H=Domestic Outdoor I=Indoor.

3/ Data must be submitted no later than January 1987.

4/ Avian reproduction study is required since repeat applications are allowed on corn and the half-lifes on soil indicate persistence ranging from 96 hours to 2640 hours.

5/ Field studies are required due to the very high acute toxicity to birds and mammals demonstrated by laboratory studies and field incidents which relate bird mortality to the use of fensulfothion. At this time two fullscale field monitoring studies are required: One for the use of granular product on field corn and another on the use of the 6 lbs/A spray concentrate of field corn. Depending on the results of the first two studies, further testing on additional crops may be necessary.

6/ Acute estuarine and marine studies are indicated for crops which are grown in excess of 300,000 acres in coastal counties. The following fensulfothion uses meet this requirement: cotton, corn, soybean, sorghum, and turf.

7/ Fish early life-stage and aquatic invertebrate life-cycle studies are required since the SWRRB - EXAMS model indicates fensulfothion will transport to water, the LC_{50} for bluegill is less than 1 mg/l, and the fensulfothion half-life in water is greater than 4 days.

8/ The requirement is reserved pending review of the fish early life-stage and aquatic invertebrate life-cycle studies.

9/ Not applicable at this time.

* Study on its own fulfills Guideline requirements.

** Study must be combined with other studies to fulfill Guidelines.

a/ Studies submitted by MOBAY Chemical Corporation. These studies may be compensable.

TABLE A

GENERIC DATA REQUIREMENTS FOR FENSULFOTHION

Data Requirement	Composition[1/]	Use Pattern[2/]	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be submitted Under FIFRA Section 3(c)(2)(B)?
§158.155 Nontarget Insect					
NONTARGET INSECT TESTING - POLLINATORS:					
141-1 - Honey bee acute contact LD_{50}	TGAI	A,B	Yes	00049254*[a/]	No
141-2 - Honey bee - toxicity of residues on foliage	TEP	A,B	Yes	00074043*	No
141-4 - Honey bee subacute feeding study	[Reserved]				

1/ Composition: TGAI = Technical grade of the active ingredient; TEP = Typical end-use product.
2/ The use patterns are coded as follows: A=Terrestrial, Food Crop; B=Terrestrial, Non-Food

* Study on its own fulfills Guideline requirements.

a/ Studies submitted by MOBAY Chemical Corporation. These studies may be compensable.

III. REQUIREMENT FOR SUBMISSION OF PRODUCT-SPECIFIC DATA

Note: This chapter applies only to manufacturing-use products, not end-use products.

A necessary first step in determining which statements must appear on your product's label is the completion and submission to EPA of product-specific data* listed on the form entitled "Product Specific Data Report" (EPA Form 8580-4, Appendix III-1) to fill "gaps" identified by EPA concerning your product. Under the authority of FIFRA Section 3(c)(2)(B), EPA has determined that you must submit these data to EPA in order to register or reregister your product(s). All of these data must be submitted not later than six months after you receive this guidance document.

"Product-Specific Data Requirements for Manufacturing-Use Products" appearing in Table B permit you to determine which product-specific data you must submit. This can be done by examining the entries in the column of those tables entitled "Must Data Be Submitted Under §3(c)(2)(B)."

*/ Product specific data pertains to data that support the formulation which is marketed; it usually includes product chemistry data and acute toxicology data.

TABLE B

PRODUCT SPECIFIC DATA REQUIREMENTS FOR MANUFACTURING-USE PRODUCTS CONTAINING FENSULFOTHION[1/]

Data Requirement	Composition[2/]	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA Section 3(c)(2)(B)?[3/]
§158.120 Product Chemistry				
Product Identity				
61-1 - Identity of Ingredients	MP	Yes	4/	No
61-2 - Description of Beginning Materials and Manufacturing Process	MP	No	-	Yes[5/]
61-3 - Discussion of Formation of Impurities	MP	No	-	Yes[6/]
Analysis and Certification of Product Ingredients:				
62-1 - Preliminary Analysis	MP	No	-	Yes[7/]
62-2 - Certification of Limits	MP	Partially	4/	Yes[8/]
62-3 - Analytical Methods for Enforcement of Limits	MP	No	-	Yes[9/]
Physical and Chemical Characteristics				
63-2 - Color	MP	Yes	GS0107001*	No
63-3 - Physical State	MP	Yes	GS0107001*	No
63-4 - Odor	MP	No	-	Yes
63-7 - Density, bulk density, or specific gravity	MP	Yes	GS0107001*	No

TABLE B

PRODUCT SPECIFIC DATA REQUIREMENTS FOR MANUFACTURING-USE PRODUCTS CONTAINING FENSULFOTHION[1/]

Data Requirement	Composition[2/]	Does EPA Have Data To Satisfy This Requirement? (Yes, No or Partially)	Bibliographic Citation	Must Additional Data Be Submitted Under FIFRA Section 3(c)(2)(B)?[3/]
§158.120 Product Chemistry (continued)				
63-12 - pH	MP	No	-	Yes
63-14 - Oxidizing or reducing action	MP	No	-	Yes
63-15 - Flammability	MP	No	-	Yes
63-16 - Explodability	MP	No	-	Yes
63-17 - Storage Stability	MP	Yes	GS0107002*[a/]	No
63-18 - Viscosity	MP	No	-	Yes
63-19 - Miscibility	MP	No	-	Yes
Other Requirements				
64- 1 - Submittal of Samples	N/A	N/A		No

1/ The 90% technical (T),EPA Reg. No. 3125-171, also serves as a manufacturing-use product.
2/ Composition: MP = Manufacturing-use product.
3/ Data must be submitted no later than 6 months from the date of this Standard.
4/ Data on the manufacturing-use technical, EPA Reg. No. 3125-171, included with a confidential ingredient statement for EPA Reg. No. 3125-213 dated December 16, 1974 submitted by Chemagro Agricultural Division, MOBAY Chemical Corporation and received by EPA January 9, 1975.
5/ The manufacturing process for the 90% technical must be submitted. This must include the name and address of the manufacturer or producer of each starting material, the purities of starting materials and intermediates and descriptions of the reaction conditions, any purification steps, and quality control measures.

6/ A discussion is required of each impurity believed to be present at greater than 0.1%, based on knowledge of the beginning materials, all possible chemical reactions, and any contamination.
7/ Five or more representative samples should be analyzed for the amount of active ingredient and each impurity present for which a certified limit is required.
8/ The identities and upper limits of the individual impurities present at greater than 0.1% (w/w) should be submitted.
9/ Quantitative methods to determine the active ingredient and impurities present at greatere than 0.1% by weight are required.

* Study on its own fulfills Guideline requirements.

a/ Studies submitted by MOBAY Chemical Corporation. These studies may be compensable.

IV. SUBMISSION OF REVISED LABELING AND PACKAGING INFORMATION

Note: This chapter applies only to manufacturing-use products, not end-use products.

The Agency requires applicants for registration or reregistration to ensure that each label (1) contains accurate, complete, and sufficient instructions and precautions, reflecting the results of data concerning the product and its ingredients, and (2) incorporates labeling format and terminology which are sufficiently standardized to avoid user confusion.

As part of your application, you will be required to submit draft labeling consistent with: applicable product-specific data; the precautionary statements and use directions; and the regulations concerning classification [40 CFR §162.11(c)], packaging [40 CFR §162.16], and labeling [40 CFR §162.10, Appendix IV-1 an IV-2], as indicated by the following paragraphs of this chapter of the guidance document.

You will be informed later when you must submit the revised labeling set forth in this guidance package.

A. Label Contents

40 CFR §162.10 (Appendix IV-1) requires that certain specific labeling statements must appear at certain locations on the label. This is referred to as format labeling. Specific label items listed below are keyed to Tables D, E, and F (Appendix IV-2).

Item 1. PRODUCT NAME - The name, brand, or trademark is required to be located on the front panel, preferably centered in the upper part of the panel. The name of a product will not be accepted if it is false or misleading. See Appendix IV-1. [40 CFR §162.10(b)]

Item 2. COMPANY NAME AND ADDRESS - The name and address of the registrant or distributor is required on the label. The name and address should preferably be located at the bottom of the front panel or at the end of the label text. See Appendix IV-1. [40 CFR §162.10(c)]

Item 3. NET CONTENTS - A net content statement is required on all labels. The preferred location is the bottom of the front panel immediately above the company name and address, or at the end of the label text. The net contents must be stated in terms of weight, expressed as avoirdupois pounds

and ounces, and stated in terms of the largest suitable unit, i.e., "1 pound 10 ounces" rather than "26 ounces." In addition to the required units specified, net contents may be expressed in metric units. See Appendix IV-1. [40 CFR §162.10(d)]

Item 4. EPA REGISTRATION NUMBER - The registration number assigned to the pesticide product must appear on the label, preceded by the phrase "EPA Registration No.," or "EPA Reg. No." The registration number must be set in type of a size and style similar to other print on that part of the label on which it appears and must run parallel to it. The registration number and the required identifying phrase must not appear in such a manner as to suggest or imply recommendation or endorsement of the product by the Agency. See Appendix IV-1. [40 CFR §162.10(e)]

Item 5. EPA ESTABLISHMENT NUMBER - The EPA establishment number, preceded by the phrase "EPA Est." is the final establishment at which the product was produced, and may appear in any suitable location on the label or immediate container. It must also appear on the wrapper or outside container of the package if the EPA establishment registration number on the immediate container cannot be clearly read through such wrapper or container. See Appendix IV-1. [40 CFR §162.10(f)]

Item 6. INGREDIENT STATEMENT - An ingredient statement is required on the front panel and must contain the name and percentage by weight of each active ingredient and the total percentage by weight of all inert ingredients. The preferred location is immediately below the product name. The ingredient statement must run parallel with, and be clearly distinguished from, other text on the panel. It must not be placed in the body of other text. See Appendix IV-1. [40 CFR 162.10(g)]

Item 6A. POUNDS PER GALLON STATEMENT - For liquid agricultural formulations, the pounds per gallon of active ingredient must be indicated on the label.

Item 7. FRONT LABEL PRECAUTIONARY STATEMENTS - All labels are required to have precautionary statements grouped together on the front panel, preferably within a block outline. The table below shows the minimum type size requirements on various size labels, as set forth in the Regulations.

Size of Label on Front Panel in Square Inches	Signal Word as Required Minimum Type Size All Capitals	"Keep Out of Reach of Children" as Required
5 and under	6 point	6 point
above 5 to 10	10 point	6 point
above 10 to 15	12 point	8 point
above 15 to 30	14 point	10 point
over 30	18 point	12 point

Item 7A. CHILD HAZARD WARNING STATEMENT - All labels are required to have the statement "Keep Out of Reach of Children" located on the front panel above the signal word except where contact with children during distribution or use is unlikely. See Appendix IV-1. [40 CFR §162.10(h)(1)(ii)]

Item 7B. SIGNAL WORD - The signal word (Caution, Warning, or Danger) is required on the front panel immediately below the child hazard warning statement. See Appendix IV-1. [40 CFR §162.10 (h)(1)(i)]

Item 7C. SKULL & CROSSBONES AND WORD "POISON" - On products assigned a toxicity Category I on the basis of oral, inhalation, or dermal toxicity, the word "Poison" shall appear on the label in red on a background of distinctly contrasting color and the skull and crossbones shall appear in immediate proximity to the word poison. See Appendix IV-1. [40 CFR §162.10(h)(1)(i)]

Item 7D. STATEMENT OF PRACTICAL TREATMENT - A statement of practical treatment (first aid or other) shall appear on the label of pesticide products in toxicity Categories I, II, and III. See Appendix IV-1. [40 CFR §162.10(h)(1)(iii)]

Item 7E. REFERRAL STATEMENT - The statement "See Side (or Back) Panel for Additional Precautionary Statements" is required on the front panel for all products, unless all required precautionary statements appear on the front panel. See Appendix IV-1. [40 CFR §162.10(h)(1)(iii)]

Item 8. SIDE/BACK PANEL PRECAUTIONARY LABELING - The precautionary statements as listed below must appear together on the label under the heading "PRECAUTIONARY STATEMENTS." The preferred location is at the top of the side or back panel preceding the directions for use, and it is preferred that these statements be surrounded by a block outline. Each of the three hazard warning statements must be headed by the appropriate hazard title. See Appendix IV-1. [40 CFR §162.10 (h)(2)]

Item 8A. HAZARD TO HUMANS AND DOMESTIC ANIMALS - Where a hazard exists to humans or domestic animals, precautionary statements are required indicating the particular hazard, the route(s) of exposure and the precautions taken to avoid accident, injury or damage. See Appendix IV-1. [40 CFR §162.10 (h)(2)(i)]

Item 8B. ENVIRONMENTAL HAZARD - Where a hazard exists to non-target organisms excluding humans and domestic animals, precautionary statements are required stating the nature of the hazard and the appropriate precautions to avoid potential accident, injury, or damage. See Appendix IV-1. [40 CFR §162.10(h)(2)(ii)]

Item 8C. PHYSICAL OR CHEMICAL HAZARD

1. Flammability statement. Precautionary statements relating to flammability of a product are required to appear on the label if it meets the criteria in Appendix IV-3. The requirement is based on the results of the flashpoint determinations and flame extension tests required to be submitted for all products. These statements are to be located in the side/back panel precautionary statements section, preceded by the heading "Physical/Chemical Hazards." Note that no signal word is used in conjunction with the flammability statements.

2. Criteria for declaration of non-flammability. The following criteria will be used to determine if a product is non-flammable:

   a. A "non-flammable gas" is a gas (or mixture of gases) that will not ignite when a lighted match is placed against the open cylinder valve.

   b. A "non-flammable liquid" is one having a flashpoint greater than 350°F (177°C) as determined by the method specified in 40 CFR §163.61-8(c)(13)(ii) of Subpart D.

   c. A "non-flammable aerosol" is one which meets the following criteria:

      i. The flame extension is zero inches, using the method specified in 40 CFR §163.61-8(c)(13)(ii);

      ii. There is no flash back; and

      iii. The flashpoint of the non-volatile liquid component is greater than 350°F (177°C), determined by the method specified in 40 CFR §163.61-8(c)(13)(i).

3. Declaration of non-flammability. Products which meet the criteria for non-flammability specified above may bear the notation "non-flammable" or "nonflammable (gas, liquid, etc.)" on the label.

   It may appear as a substatement to the ingredients statement, or on a back or side panel, but shall not be highlighted or emphasized (as with an inordinately large type size) in any way that may detract from precaution.

4. Other physical/chemical hazard statements. When chemistry data submitted in accordance with 40 CFR §163.61-10(c) demonstrate hazards of a physical or chemical nature other than flammability, appropriate statements of hazard will be prescribed. Such statements may address hazards of explosivity, oxidizing or reducing capability, or mixing with other substances to produce toxic fumes.

Item 9. MISUSE STATEMENT - The following statement is required on your label: "It is a violation of Federal law to use this product in a manner inconsistent with its labeling." See Appendix IV-1. [40 CFR §162.10(l)(2)(ii)]

Item 10A. STORAGE AND DISPOSAL BLOCK - All labels are required to bear storage and disposal statements. These statements are developed for specific containers, sizes, and chemical content. Make certain that the statement you use pertains specifically to your product. These instructions must be grouped and appear under the heading "Storage and Disposal" in the directions for use. This heading must be set in the same type sizes as required for the child hazard warning. Refer to Appendix IV-5 for the latest specific storage and disposal product label statements.

Item 10B. DIRECTIONS FOR USE - Directions for use must be stated in terms which can be easily read and understood by the average person likely to use or to supervise the use of the pesticide. When followed, directions must be adequate to protect the public from fraud and from personal injury and to prevent unreasonable adverse effects on the environment. See Appendix IV-1. [40 CFR §162.10]

B. Collateral Information

Bulletins, leaflets, circulars, brochures, data sheets, flyers, and other graphic printed matter which is referred to on the label or which is to accompany the product are termed collateral labeling. Such labeling may not bear claims or representations that differ in substance from those accepted in connection with registration of the product. It should be made part of the response to this notice and submitted for review.

V. INSTRUCTIONS FOR SUBMISSION

All applications prepared in response to this Notice should be addressed as follows:

George T. LaRocca (Product Manager 15)
Phone No. (703) 557-2400
Registration Division (TS-767)
Office of Pesticide Programs
Environmental Protection Agency
Washington, D.C. 20460

For each product for which continued registration is desired:

1. Within 90 days from receipt of this document, you must submit the "FIFRA Section 3(c)(2)(B) Summary Sheet" EPA Form 8580-1. Refer to Appendix II-2 with appropriate attachments.

2. Within 6 months from receipt of this document registrants must submit:

   a. Confidential Statement of Formula, EPA Form 8570-4.

   b. Product Specific Data Report, EPA Form 8580-4 (Appendix III-1).

   c. Two copies of any required product-specific data.

3. Within the time set forth in Table A, all generic data must be submitted by the affected registrant(s).

Note: If for any reason any required test is delayed or aborted so that meeting the agreed submission time will be delayed, notify the Product Manager listed above.

You will be informed at a later date when you must submit your Application for Amended Pesticide Registration (EPA Form 8570-1) and the revised labeling set forth in this guidance package.

BIBLIOGRAPHY

00044918 Everett, L.J. (1968) Rat Metabolism of P32 Labeled Dasanit: Report No. 23441. (Unpublished study received Jul 20, 1976 under 3125-163; submitted by Mobay Chemical Corp., Kansas City, Mo.; CDL:095238-I)

00044925 Houseworth, L.D.; Tweedy, B.G. (1973) Report on Parent Leaching Studies for (R) Dasanit: Report No. 37182. (Unpublished study received Jul 20, 1976 under 3125-163; prepared in cooperation with Univ. of Missouri, Dept. of Plant Pathology, submitted by Mobay Chemical Corp., Kansas City, Mo.; CDL:095238-P)

00044926 Houseworth, L.D.; Tweedy, B.G. (1974) The Metabolism of (R) Dasanit in Soil: Report No. 39220. (Unpublished study received Jul 20, 1976 under 3125-163; prepared in cooperation with Univ. of Missouri, Dept. of Plant Pathology, submitted by Mobay Chemical Corp., Kansas City, Mo.; CDL:095238-R)

00044927 Tweedy, B.G.; Houseworth, L.D. (1974) Leaching of Aged Residues of Dasanit-Et-1-14C in Sandy Loam Soil: Report No. 40565. (Unpublished study received Jul 20, 1976 under 3125-163; prepared in cooperation with Univ. of Missouri, Dept. of Plant Pathology, submitted by Mobay Chemical Corp., Kansas City, Mo.; CDL: 095238-S)

00044930 Takase, I.; Yoshimoto, Y. (1975) The Metabolic Behaviour of Fensulfothion in Flooded Soil: Report No. 1037(RA; Report No. 46133. (Unpublished paper presented at the Annual Meeting of Japan Applied Entomology and Zoology; Aug 1974; unpublished study received Jul 20, 1976 under 3125-163; prepared by Agricultural Chemicals Institute, Japan, submitted by Mobay Chemical Corp., Kansas City, Mo.; CDL:095238-V)

00047706 Doull, J.; Root, M.; DiGiacomo, R.; et al. (1967) Effect of Bayer 25141 in the Diet on the Reproduction and Lactation of Mice: Report No. 20720. (Unpublished study received Dec 30, 1968 under 9F0789; prepared by Univ. of Chicago, Toxicity Laboratory, submitted by Mobay Chemical Corp., Kansas City, Mo.; CDL: 093097-D)

00049254 Atkins, E.L., Jr.; Anderson, L.D. (1967) Toxicity of Pesticides and Other Agricultural Chemicals to Honey Bees: Laboratory Studies. By Univ. of California--Riverside, Dept. of Entomology. Riverside, Calif.: UC, Agricultural Extension Service. (M-16; submitter report no. 22259, also In unpublished submission received Mar 22, 1976 under 3125-71; submitted by Mobay Chemical Corp, Kansas City, Mo.; CDL:224114-K)

00049568 Ladd, R. (1971) Report to Chemagro Corporation: Teratogenic Study with Dasanit Technical in Albino Rabbits: IBT No. J9028; Report No. 30169. (Unpublished study received Jul 1, 1972 under 2F1209; prepared by Industrial Bio-Test Laboratories, Inc., submitted by Mobay Chemical Corp., Kansas City, Mo.; CDL:091031-E)

00052971 Doull, J.; DiGiacomo, R.; Root, M.; et al. (1966) Chronic Oral Toxicity of Bayer 25141 to Dogs: Report No. 19587. (Unpublished study received Mar 24, 1967 under unknown admin. no.; prepared by Univ. of Chicago, Toxicity Laboratory, submitted by Mobay Chemical Corp., Kansas City, Mo.; CDL:118739-B)

00052974 Doull, J.; DiGiacomo, R.; Root, M.; et al. (1966) Chronic Oral Toxicity of Bayer 25141 to Rats: Report No. 19294. (Unpublished study received Mar 24, 1967 under unknown admin. no.; prepared by Univ. of Chicago, Toxicity Laboratory, submitted by Mobay Chemical Corp., Kansas City, Mo.; CDL:118739-F)

00068214 Thornton, J.S.; Hurley, J.B.; Obrist, J.J. (1976) Soil Thin-layer Mobility of Twenty Four Pesticide Chemicals: Report No. 51016. (Unpublished study received Jul 11, 1977 under 3125-315; submitted by Mobay Chemical Corp., Kansas City, Mo.; CDL:230908-I)

00072976 DuBois, K.P.; Raymund, A.B. (1962) The Acute Toxicity of Bayer 25141 to Mammals: Report No. 8567. (Unpublished study received Jul 1, 1972 under 2F1209; prepared by Univ. of Chicago, Dept. of Pharmacology, submitted by Mobay Chemical Corp., Kansas City, Mo.; CDL:091031-E)

00073059 Miles, J.R.W.; Tu, C.M.; Harris, C.R. (1979) Persistence of eight organophosporus insecticides in sterile and non-sterile mineral and organic soils. Bulletin of Environmental Contamination and Toxicology 22:312-318. (Also In unpublished submission received Jun 27, 1979 under 464-448; submitted by Dow Chemical U.S.A., Midland, Mich.; CDL:238974-A)

00074043 Johansen, C.; Hutt, R. (1963) Bee Poisoning Investigations, 1963. (Unpublished study received Feb 8, 1966 under unknown admin. no.; prepared by Washington State Univ., submitted by Shell Chemical Co., Washington, D.C.; CDL:128498-F)

00078526 Lamb, D.W.; Roney, D.J. (1972) Acute Toxicity of (R) Dasanit Technical, Dasanit 15% Granular and Dasanit 6 lbs/gal Spray Concentrate to Bluegill and Rainbow Trout: Report No. 34034. (Unpublished study received Jul 31, 1972 under 3125-213; submitted by Mobay Chemical Corp., Kansas City, Mo.; CDL:120480-BB)

00079144 Simmons, C.E. (1981) Leaching Characteristics of (R) Dasanit on Aged Soil: Report No. 45654. Rev. (Unpublished study received Jun 26, 1981 under 3125-163; submitted by Mobay Chemical Corp., Kansas City, Mo.; CDL:245312-A)

00094233 Lamb, D.W.; Jones, R.E. (1973) Toxicity of (R) Dasanit- (R) Disyston and Dasanit-Tilliam to Bobwhite Quail and Mallard Ducks: Report No. 38462. (Unpublished study received Jan 25, 1974 under 3125-252; submitted by Mobay Chemical Corp., Kansas City, Mo.; CDL:025811-F)

00094258 Root, M.; Taitel, C.; Doull, J. (1964) Subacute Oral Toxicity of Bayer 25141 in Male and Female Dogs: Submitter 13608. (Unpublished study received on unknown date under 7F0600; prepared by Univ. of Chicago, Dept. of Pharmacology, submitted by Mobay Chemical Corp., Kansas City, Mo.; CDL:090773-W)

00094259 Kimmerle, G.; Grundmann, E. (1965) Neurotoxic Studies with S 767 Active Ingredient: Submitter 16496. (Translation; unpublished study, including 17166 and letter dated Feb 18, 1965 from G. Kimmerle to Dr. Schrader, received on unknown date under 7F0600; prepared by Farbenfabriken Bayer AG, West Germany, submitted by Mobay Chemical Corp., Kansas City, Mo.; CDL:090773-Y)

00094326 Mobay Chemical Corporation (1966) Synopsis of Metabolic, Analytical, Residue, and Flavor Information on Bay 25141 Treated Tobacco. Includes methods dated Mar 5, 1964 and Jun 16, 1966 Summary of studies 101760-C and 007107-D, (Compilation; unpublished study received Aug 23, 1966 under 3125-163; CDL:101760-A)

00094336 Root, M.; Taitel, C.; Doull, J. (1964) Subacute Oral Toxicity of Bayer 25141 to Male and Female Rats: submitter 14243. (Unpublished study received Jun 22, 1965; Feb 7, 1966 under 3125-EX-101; prepared by Univ. of Chicago, Dept. of Pharmacology, submitted by Mobay Chemical Corp., Kansas City, Mo.; CDL:126969-C)

00094359 Puhl, R.J. (1977) The Aerobic and Anaerobic Metabolism of (R) Dasanit-ring-UL-14C in Soil: Report No. 48436. Rev. (Unpublished study received Jun 20, 1979 under 3125-163; submitted by Mobay Chemical Corp., Kansas City, Mo.; CDL:241183-D)

00094363 Puhl, R.J.; Hurley, J.B. (1978) Soil Adsorption and Desorption of (R) Dasanit-ring-UL-14C: Report No. 66740. (Unpublished study received Jun 20, 1979 under 3125-163; submitted by Mobay Chemical Corp., Kansas City, Mo.; CDL:241183-J)

00094369 Thornton, J.S.; Morris, R.A. (1979) Residues of (R) Dasanit and Metabolites in Field Rotational Crops: 67265. Summary of studies 241183-D, 241183-K through 241183-O and 091421-D. (Unpublished study received Jun 20, 1979 under 3125-163; submitted by Mobay Chemical Corp., Kansas City, Mo.; CDL:241183-P)

00094370 Obrist, J.J.; Thornton, J.S. (1979) Photodecomposition of (R) Dasanit Applied to a Soil Surface: 67266. (Unpublished study received Jun 20, 1979 under 3125-163; submitted by Mobay Chemical Corp., Kansas City, Mo.; CDL:241183-Q)

00094915 Machemer, L. (1978) S 767 (Fensulfothion, the Active Ingredient of Terracur P and Dasanit): Study of Embryotoxic and Teratogenic Effects on Rabbits after Oral Administration: Bayer Report No. 7745; Mobay ADC Report No. 66533. (Unpublished study received Aug 20, 1981 under 3125-171; prepared by Bayer AG, West Germany, submitted by Mobay Chemical Corp., Kansas City, Mo.; CDL:246223-A)

05003191 Schafer, E.W., Jr.; Brunton, R.B.; Lockyer, N.F.; De Grazio, J.W. (1973) Comparative toxicity of seventeen pesticides to the Quelea, house sparrow, and red-winged blackbird. Toxicology and Applied Pharmacology 26(1):154-157.

05008363 Hudson, R.H.; Haegele, M.A.; Tucker, R.K. (1979) Acute oral and percutaneous toxicity of pesticides to mallards: correlations with mammalian toxicity data. Toxicology and Applied Pharmacology 47(3):451-460.

05014941 Pickering, Q.H.; Henderson, C. (1966) The acute toxicity of some pesticides to fish. Ohio Journal of Science 66(5):508-513.

05021578 Simmon, V.F. (1979) "In Vitro" Microbiological Mutagenicity and Unscheduled DNA Synthesis Studies of Eighteen Pesticides. Research Triangle Park, N.C.: U.S. Environmental Protection Agency, Health Effects Research Laboratory. (EPA-600/1-79-041; available from: NTIS, Springfield, VA; PB80-133226)

GS0107001 Chemagro Corporation (1966) Formulators Manual for DASANIT (BAY 25141) Granular Formulations (Received March 27, 1967 under EPA Reg. No. 3125-171)

GS0107002 Chemagro Agricultural Division, MOBAY Chemical Corporation (1977) Product Chemistry Update: Data from Document No. AS-77-1047, Report No. 34837 (Unpublished study received July 13, 1977 under EPA Reg. No. 3125-163: RCB 230936)

GS0107003 Benjamini, E., R. L. Metcalf and T. R. Fukuto (1959) The chemistry and mode of action of the insecticide 0,0-diethyl 0-p methylsulfinylphenyl phosphorothionate and its analogues. J. Econ. Entomol. 52(1): 94-98.

GS0107004 Benjamini, E., R. L. Metcalf and T. R. Fukuto (1959) Contact and systemic insecticidal properties of 0,0-diethyl 0-p-methylsulfinylphenyl phosphorothionate and its analogues. J. Econ. Entomol. 52(1): 99-102. (Also in unpublished submission received August 7, 1967 under PP#7F0600; submitted by Chemagro Corporation; RCB 115053)

GS0107005 Chemagro Corporation (1966) DASANIT Analytical and Residue Information on Treatment of Peanuts and Sugar Beets-Volume 1 (Unpublished study received June 13, 1969 under PP#9F0838; RCB 116098)

GS0107006 Chemagro Corporation (1968) Petition for Tolerances: DASANIT (formerly BAY 25141) in or on Corn (Sweet, Popcorn), Potatoes, and Tomatoes (Unpublished study received January 7, 1969 under PP#9F0789; RCB 115880)

GS0107007 Avrahami, M. and I. L. Gernert (1973) Distribution, metabolism, and excretion of 32_p-labelled fensulfothion in sheep. N. Z. Journal of Experimental Agriculture 1:197-202.

GS0107008 Chemagro Corporation (1967) DASANIT Analytical and Residue Information on Corn, Potatoes, and Tomatoes (Unpublished study received April 6, 1967 under PP#7F0600; RCB 115059)

GS0107009 Chemagro Corporation (1967) Supplement No. 1 to a Brochure entitled DASANIT Analytical and Residue Information on Corn, Potatoes, and Tomatoes (Unpublished study received August 7, 1967 under PP#7F0600; RCB 115053)

GS0107010 Chemagro Corporation (1967) Supplement No. 2 to a Brochure entitled DASANIT Analytical and Residue information on Corn, Potatoes, and Tomatoes (Unpublished study received November 27, 1967 under PP#7F0600; RCB 115058)

GS0107011 Eidelman, M. (1967) Report on method tryout for PP#7F0600 (Memorandum prepared by Laboratory Investigations Section, PB, DFSA, Food and Drug Administration dated September 5, 1967 and filed under PP#7F0600; RCB 115055)

GS0107012 Chemagro Corporation (1967) DASANIT Analytical and Residue information on Bananas (Unpublished study received January 10, 1968 under PP#8E0696; RCB 115515)

GS0107013 Chemagro Corporation (1968) Determination of Residues of DASANIT in corn by thermionic Gas Chromatography (Unpublished study received May 26, 1969 under PP#9F0820: RCB 116846)

GS0107014 Chemagro Corporation (1969) DASANIT Analytical and Residue Information on Pineapple (Unpublished study received April 2, 1969 under PP#9F0820; RCB 116029)

GS0107015 Chemagro Corporation (1968) DASANIT Analytical and Residue Information on Treatment of Peanuts and Sugar Beets-Volume 2 (Unpublished study received June 13, 1969 under PP#9F0838; RCB 116094)

GS0107016 Chemagro Corporation (1966) BAY 25141 Metabolic, Analytical, Residue, and Flavor Information - Treatment of Rutabagas (Unpublished study received April 26, 1966 under PP#9E0853; RCB 116157)

GS0107017 Chemagro Corporation (1969) Report No. 25464: Determination of Residues of DASANIT in cured tobacco by thermionic emission gas chromatography (Unpublished study received November 11, 1975 under PP#6F1702)

GS0107018 Chemagro Corporation (1969) DASANIT Analytical and Residue Information on Sugar Cane (Unpublished study received November 14, 1969 under PP#0F0905; RCB 116366)

GS0107019 Chemagro Corporation (1972) DASANIT Analytical and Residue Information on Cotton and Soybeans (Unpublished study received November 18,1971 under PP#2F1209; RCB 117626)

GS0107020 Chemagro, Division of Baychem Corporation (1972) DASANIT Analytical and Residue Information on Corn and Sweet Potatoes (Unpublished study received May 1, 1972 under PP#2F1260; RCB 117796)

GS0107021 Chemagro Agricultural Division, MOBAY Chemical Corporation (1975) DASANIT Residue Chemistry on Snap Beans, Kidney Beans, and Navy Beans (Unpublished study received November 11, 1975 under PP#6F1702; RCB 095238)

GS0107022 Chemagro Agricultural Division, MOBAY Chemical Corporation (1975) DASANIT - DI-SYSTON Analytical and Residue Information on Peanuts and Sorghum (Unpublished study received July 15, 1975 under PP#6F1655)

GS0107023 Chemagro Corporation (1967) BAY 25141 Metabolic, Analytical and Residue Information on Dry Onions (Unpublished study received May 2, 1967 under PP#7F0600; RCB 115057)

GS0107024 Chemagro Corporation (1968) Petition for Tolerances: DASANIT (formerly BAY 25141) in or on Corn (Sweet, Popcorn), Potatoes, and Tomatoes-continuation (Unpublished study received January 7,1969 under PP#9F0789; RCB 115878)

GS0107025 Chemagro Corporation ((1972) Identification of DASANIT residues in cured tobacco. Chemistry study, pages 187-198. (Unpublished study received November 11, 1975 under PP#6F1702)

GS0107026 McCann, J. (1977) Beltsville EPA Fish Study with Fensulfothion on Salmo gairdneri , Test No. 1096 (EPA Animal Biology Lab report dated May 16, 1977 under EPA Reg. No. 3125-171)

OMB Approval No. 2000-0468 (Expires: 12-31-83)

CERTIFICATION OF ATTEMPT TO ENTER INTO AN AGREEMENT WITH OTHER REGISTRANTS FOR DEVELOPMENT OF DATA

(To qualify, certify ALL four items)

1. I am duly authorized to represent the following firm(s) who are subject to the requirements of a Notice under FIFRA Section 3(c)(2)(B) contained in a Guidance Document to submit data concerning the active ingredient:	GUIDANCE DOCUMENT DATE ACTIVE INGREDIENT
NAME OF FIRM	**EPA COMPANY NUMBER**

(This firm or group of firms is referred to below as "my firm".)

2. My firm is willing to develop and submit the data as required by that Notice, if necessary. However, my firm would prefer to enter into an agreement with one or more other registrants to develop jointly, or to share in the cost of developing, the following required items or data:

3. My firm has offered in writing to enter into such an agreement. Copies of the offers are attached. That offer was irrevocable and included an offer to be bound by an arbitration decision under FIFRA Section 3(c)(2)(B)(iii) if final agreement on all terms could not be reached otherwise. This offer was made to the following firm(s) on the following date(s):

NAME OF FIRM	DATE OF OFFER

However, none of those firm(s) accepted my offer.

4. My firm requests that EPA not suspend the registration(s) of my firm's product(s), if any of the firms named in paragraph (3) above have agreed to submit the data listed in paragraph (2) above in accordance with the Notice. I understand EPA will promptly inform me whether my firm must submit data to avoid suspension of its registration(s) under FIFRA Section 3(c)(2)(B). (This statement does not apply to applicants for new products.) I give EPA permission to disclose this statement upon request.

TYPED NAME	SIGNATURE	DATE

EPA Form 8580-6 (10-82)

OMB Approval No. 2000-0468 (Expires 12-31-83)

FIFRA SECTION 3(C)(2)(B) SUMMARY SHEET	EPA REGISTRATION NO.
PRODUCT NAME	
APPLICANT'S NAME	DATE GUIDANCE DOCUMENT ISSUED

With respect to the requirement to submit "generic" data imposed by the FIFRA section 3(C)(2)(B) notice contained in the referenced Guidance Document, I am responding in the following manner:

☐ 1. I will submit data in a timely manner to satisfy the following requirements. If the test procedures I will use deviate from (or are not specified in) the Registration Guidelines or the Protocols contained in the Reports of Expert Groups to the Chemicals Group, OECD Chemicals Testing Programme, I enclose the protocols that I will use:

☐ 2. I have entered into an agreement with one or more other registrants under FIFRA section 3(C)(2)(B)(ii) to satisfy the following data requirements. The tests, and any required protocols, will be submitted to EPA by:

NAME OF OTHER REGISTRANT

☐ 3. I enclose a completed "Certification of Attempt to Enter Into an Agreement with Other Registrants for Development of Data" with respect to the following data requirements:

☐ 4. I request that you amend my registration by deleting the following uses (this option is not available to applicants for new products):

☐ 5. I request voluntary cancellation of the registration of this product. (This option is not available to applicants for new products.)

REGISTRANT'S AUTHORIZED REPRESENTATIVE	SIGNATURE	DATE

EPA Form 8580-1 (10-82)

PRODUCT SPECIFIC DATA REPORT

EPA Registration No._____ Guidance Document for_____

Date_____

Registration Guideline No.	Name of Test	Test not required for my product listed above (check below)	I am complying with data requirements by		(For EPA Use Only) Accession Numbers Assigned
			Citing MRID#	Submitting Data (Attached)	
§158.20 PRODUCT CHEMISTRY					
61-1	Identity of ingredients				
61-2	Statement of composition				
61-3	Discussion of formation of ingredients				
62-1	Preliminary analysis				
62-2	Certification of limits				
62-3	Analytical methods for enforcement limits				
63-2	Color				
63-3	Physical state				
63-4	Odor				
63-5	Melting point				
63-6	Boiling point				
63-7	Density, bulk-density, or specific gravity				
63-8	Solubility				
63-9	Vapor pressure				
63-10	Dissociation constant				
63-11	Octanol/water partition coefficient				
63-12	pH				
63-13	Stability				
63-14	Oxidizing/reducing reaction				
63-15	Flammability				
63-16	Explodability				
63-17	Storage stability				
63-18	Viscosity				
63-19	Miscibility				
63-20	Corrosion characteristics				
63-21	Dielectric breakdown voltage				
§158.135 TOXICOLOGY					
81-1	Acute oral LD-50, rat				
81-2	Acute dermal LD-50				
81-3	Acute inhalation, LC-50 rat				
81-4	Primary eye irritation, rabbit				
81-5	Primary dermal irritation				
81-6	Dermal sensitization				

Reproduced from best available copy.

cant obtained the data from another firm (identify); applicant copied data from a publication; applicant obtained a copy of the data from EPA).

(d) The applicant shall submit with his application a statement that EPA, in its evaluation of the properties, efficacy, and safety of the formulated end-use product, may not consider any data as supporting the application, except the following data:

(1) The data the applicant has submitted to EPA under paragraph (b) of this section;

(2) Other data pertaining to the safety of the product's active ingredients, rather than to the safety of the end-use product; and

(3) Existing tolerances, food additive regulations, exemptions, and other clearances issued under the Federal Food, Drug, and Cosmetic Act.

(e) If the applicant knows that any item of data he submitted under this section was generated by (or at the expense of) another person who originally submitted the data to EPA (or its predecessor, USDA) on or after January 1, 1970, to support an application for registration, experimental use permit, or amendment adding a new use to an existing registration, or for reregistration (unless the applicant and the original data submitter have reached written agreement on the amount and the terms of payment of any compensation that may be payable under FIFRA section 3(c)(1)(D)(ii) with regard to approval of the application), the applicant shall submit to EPA a statement that he has furnished to each such identified original data submitter:

(1) A notification of the applicant's intent to apply for registration, including the proposed product name;

(2) An offer to pay the person compensation, with regard to the approval of the application, to the extent required by FIFRA sections 3(c)(1)(D) and 3(c)(2)(D);

(3) An identification of the item(s) of data to which the offer applies;

(4) An offer to commence negotiations to ascertain the amount and terms of compensation to be paid; and

(5) The applicant's name, address, and telephone number.

(f) If the applicant's product contains any active ingredient other than those that are present solely because of the incorporation into the product, during formulation, of one or more other registered pesticide products purchased from another producer, then the applicant shall also comply with § 162.9-5 as to such active ingredient, and the application shall contain an acknowledgment that for purposes of FIFRA section 3(c)(1)(D) the application relies on (and any resulting registration should be regarded as if it were based on the Administrator's consideration of) the following data:

(1) All data submitted or specifically cited by the applicant in support of the registration; and

(2) Each other item of data in the Agency's files which:

(i) Concerns the properties or effects of any such active ingredient; and

(ii) Is one of the types of data that EPA would require to be submitted for scientific review by EPA if the applicant sought the initial registration under FIFRA Section 3(c)(5) of a product with composition and intended uses identical to those proposed for the applicant's product, under the data requirements in effect on the date EPA approves the applicant's present application.

(Secs. 3, 6, and 25 of FIFRA, as amended, 7 U.S.C. 136 *et seq.*)

[44 FR 27953, May 11, 1979]

§ 162.10 Labeling requirements.

(a) *General*—(1) *Contents of the label.* Every pesticide products shall bear a label containing the information specified by the Act and the regulations in this Part. The contents of a label must show clearly and prominently the following:

(i) The name, brand, or trademark under which the product is sold as prescribed in paragraph (b) of this section;

(ii) The name and address of the producer, registrant, or person for whom produced as prescribed in paragraph (c) of this section;

(iii) The net contents as prescribed in paragraph (d) of this section;

(iv) The product registration number as prescribed in paragraph (e) of this section;

(v) The producing establishment number as prescribed in paragraph (f) of this section;

(vi) An ingredient statement as prescribed in paragraph (g) of this section;

(vii) Warning or precautionary statements as prescribed in paragraph (h) of this section;

(viii) The directions for use as prescribed in paragraph (i) of this section; and

(ix) The use classification(s) as prescribed in paragraph (j) of this section.

(2) *Prominence and legibility.* (i) All words, statements, graphic representations, designs or other information required on the labeling by the Act or the regulations in this part must be clearly legible to a person with normal vision, and must be placed with such conspicuousness (as compared with other words, statements, designs, or graphic matter on the labeling) and expressed in such terms as to render it likely to be read and understood by the ordinary individual under customary conditions of purchase and use.

(ii) All required label text must:

(A) Be set in 6-point or larger type;

(B) Appear on a clear contrasting background; and

(C) Not be obscured or crowded.

(3) *Language to be used.* All required label or labeling text shall appear in the English language. However, the Agency may require or the applicant may propose additional text in other languages as is considered necessary to protect the public. When additional text in another language is necessary, all labeling requirements will be applied equally to both the English and other-language versions of the labeling.

(4) *Placement of Label*—(i) *General.* The label shall appear on or be securely attached to the immediate container of the pesticide product. For purposes of this Section, and the misbranding provisions of the Act, "securely attached" shall mean that a label can reasonably be expected to remain affixed during the foreseeable conditions and period of use. If the immediate container is enclosed within a wrapper or outside container through which the label cannot be clearly read, the label must also be securely attached to such outside wrapper or container, if it is a part of the package as customarily distributed or sold.

(ii) *Tank cars and other bulk containers*—(A) *Transportation.* While a pesticide product is in transit, the appropriate provisions of 49 CFR Parts 170-189, concerning the transportation of hazardous materials, and specifically those provisions concerning the labeling, marking and placarding of hazardous materials and the vehicles carrying them, define the basic Federal requirements. In addition, when any registered pesticide product is transported in a tank car, tank truck or other mobile or portable bulk container, a copy of the accepted label must be attached to the shipping papers, and left with the consignee at the time of delivery.

(B) *Storage.* When pesticide products are stored in bulk containers, whether mobile or stationary, which remain in the custody of the user, a copy of the label of labeling, including all appropriate directions for use, shall be securely attached to the container in the immediate vicinity of the discharge control valve.

(5) *False or misleading statements.* Pursuant to section 2(q)(1)(A) of the Act, a pesticide or a device declared subject to the Act pursuant to § 162.15, is misbranded if its labeling is false or misleading in any particular including both pesticidal and non-pesticidal claims. Examples of statements or representations in the labeling which constitute misbranding include:

(i) A false or misleading statement concerning the composition of the product;

(ii) A false or misleading statement concerning the effectiveness of the product as a pesticide or device;

(iii) A false or misleading statement about the value of the product for purposes other than as a pesticide or device;

(iv) A false or misleading comparison with other pesticides or devices;

(v) Any statement directly or indirectly implying that the pesticide or device is recommended or endorsed by

any agency of the Federal Government;

(vi) The name of a pesticide which contains two or more principal active ingredients if the name suggests one or more but not all such principal active ingredients even though the names of the other ingredients are stated elsewhere in the labeling;

(vii) A true statement used in such a way as to give a false or misleading impression to the purchaser;

(viii) Label disclaimers which negate or detract from labeling statements required under the Act and these regulations;

(ix) Claims as to the safety of the pesticide or its ingredients, including statements such as "safe," "nonpoisonous," "noninjurious," "harmless" or "nontoxic to humans and pets" with or without such a qualifying phrase as "when used as directed"; and

(x) Non-numerical and/or comparative statements on the safety of the product, including but not limited to:

(A) "Contains all natural ingredients";

(B) "Among the least toxic chemicals known"

(C) "Pollution approved"

(6) *Final printed labeling.* (i) Except as provided in paragraph (a)(6)(ii) of this section, final printed labeling must be submitted and accepted prior to registration. However, final printed labeling need not be submitted until draft label texts have been provisionally accepted by the Agency.

(ii) Clearly legible reproductions or photo reductions will be accepted for unusual labels such as those silk-screened directly onto glass or metal containers or large bag or drum labels. Such reproductions must be of microfilm reproduction quality.

(b) *Name, brand, or trademark.* (1) The name, brand, or trademark under which the pesticide product is sold shall appear on the front panel of the label.

(2) No name, brand, or trademark may appear on the label which:

(i) Is false or misleading, or

(ii) Has not been approved by the Administrator through registration or supplemental registration as an additional name pursuant to § 162.6(b)(4).

(c) Name and address of producer, registrant, or person for whom produced. An unqualified name and address given on the label shall be considered as the name and address of the producer. If the registrant's name appears on the label and the registrant is not the producer, or if the name of the person for whom the pesticide was produced appears on the label, it must be qualified by appropriate wording such as "Packed for * * *," "Distributed by * * *," or "Sold by * * *" to show that the name is not that of the producer.

(d) *Net weight or measure of contents.* (1) The net weight or measure of content shall be exclusive of wrappers or other materials and shall be the average content unless explicitly stated as a minimum quantity.

(2) If the pesticide is a liquid, the net content statement shall be in terms of liquid measure at 68° F (20°C) and shall be expressed in conventional American units of fluid ounces, pints, quarts, and gallons.

(3) If the pesticide is solid or semisolid, viscous or pressurized, or is a mixture of liquid and solid, the net content statement shall be in terms of weight expressed as avoirdupois pounds and ounces.

(4) In all cases, net content shall be stated in terms of the largest suitable units, i.e., "1 pound 10 ounces" rather than "26 ounces."

(5) In addition to the required units specified, net content may be expressed in metric units.

(6) Variation above minimum content or around an average is permissible only to the extent that it represents deviation unavoidable in good manufacturing practice. Variation below a stated minimum is not permitted. In no case shall the average content of the packages in a shipment fall below the stated average content.

(e) *Product registration number.* The registration number assigned to the pesticide product at the time of registration shall appear on the label, preceded by the phrase "EPA Registration No.," or the phrase "EPA Reg. No." The registration number shall be set in type of a size and style similar to other print on that part of the label on which it appears and shall run par-

allel to it. The registration number and the required identifying phrase shall not appear in such a manner as to suggest or imply recommendation or endorsement of the product by the Agency.

(f) *Producing establishments registration number.* The producing establishment registration number preceded by the phrase "EPA Est.", of the final establishment at which the product was produced may appear in any suitable location on the label or immediate container. It must appear on the wrapper or outside container of the package if the EPA establishment registration number on the immediate container cannot be clearly read through such wrapper or container.

(g) *Ingredient statement*—(1) *General.* The label of each pesticide product must bear a statement which contains the name and percentage by weight of each active ingredient, the total percentage by weight of all inert ingredients; and if the pesticide contains arsenic in any form, a statement of the percentages of total and water-soluble arsenic calculated as elemental arsenic. The active ingredients must be designated by the term "active ingredients" and the inert ingredients by the term "inert ingredients," or the singular forms of these terms when appropriate. Both terms shall be in the same type size, be aligned to the same margin and be equally prominent. The statement "Inert Ingredients, none" is not required for pesticides which contain 100 percent active ingredients. Unless the ingredient statement is a complete analysis of the pesticide, the term "analysis" shall not be used as a heading for the ingredient statement.

(2) *Position of ingredient statement.* (i) The ingredient statement is normally required on the front panel of the label. If there is an outside container or wrapper through which the ingredient statement cannot be clearly read, the ingredient statement must also appear on such outside container or wrapper. If the size or form of the package makes it impracticable to place the ingredient statement on the front panel of the label, permission may be granted for the ingredient statement to appear elsewhere.

(ii) The text of the ingredient statement must run parallel with other text on the panel on which it appears, and must be clearly distinguishable from and must not be placed in the body of other text.

(3) *Names to be used in ingredient statement.* The name used for each ingredient shall be the accepted common name, if there is one, followed by the chemical name. The common name may be used alone only if it is well known. If no common name has been established, the chemical name alone shall be used. In no case will the use of a trademark or proprietary name be permitted unless such name has been accepted as a common name by the Administrator under the authority of Section 25(c)(6).

(4) *Statements of percentages.* The percentages of ingredients shall be stated in terms of weight-to-weight. The sum of percentages of the active and the inert ingredients shall be 100. Percentages shall not be expressed by a range of values such as "22-25%." If the uses of the pesticide product are expressed as weight of active ingredient per unit area, a statement of the weight of active ingredient per unit volume of the pesticide formulation shall also appear in the ingredient statement.

(5) *Accuracy of stated percentages.* The percentages given shall be as precise as possible reflecting good manufacturing practice. If there may be unavoidable variation between manufacturing batches, the value stated for each active ingredient shall be the lowest percentage which may be present.

(6) *Deterioration.* Pesticides which change in chemical composition significantly must meet the following labeling requirements:

(i) In cases where it is determined that a pesticide formulation changes chemical composition significantly, the product must bear the following statement in a prominent position on the label: "Not for sale or use after [date]."

(ii) The product must meet all label claims up to the expiration time indicated on the label.

(7) *Inert ingredients.* The Administrator may require the name of any

inert ingredient(s) to be listed in the ingredient statement if he determines that such ingredient(s) may pose a hazard to man or the environment.

(h) *Warnings and precautionary statements.* Required warnings and precautionary statements concerning the general areas of toxicological hazard including hazard to children, environmental hazard, and physical or chemical hazard fall into two groups: those required on the front panel of the labeling and those which may appear elsewhere. Specific requirements concerning content, placement, type size, and prominence are given below.

(1) *Required front panel statements.* With the exception of the child hazard warning statement, the text required on the front panel of the label is determined by the Toxicity Category of the pesticide. The category is assigned on the basis of the highest hazard shown by any of the indicators in the table below:

Hazard indicators	Toxicity categories			
	I	II	III	IV
Oral LD_{50}	Up to and including 50 mg/kg.	From 50 thru 500 mg/kg.	From 500 thru 5000 mg/kg.	Greater than 5000 mg/kg.
Inhalation LC_{50}	Up to and including 2 mg/liter.	From .2 thru 2 mg/liter.	From 2. thru 20 mg/liter.	Greater than 20 mg/liter.
Dermal LD_{50}	Up to and including 200 mg/kg.	From 200 thru 2000.	From 2,000 thru 20,000.	Greater than 20,000.
Eye effects	Corrosive; corneal opacity not reversible within 7 days.	Corneal opacity reversible within 7 days; irritation persisting for 7 days.	No corneal opacity; irritation reversible within 7 days.	No irritation.
Skin effects	Corrosive.	Severe irritation at 72 hours.	Moderate irritation at 72 hours.	Mild or slight irritation at 72 hours.

(i) *Human hazard signal word*—(A) *Toxicity Category I.* All pesticide products meeting the criteria of Toxicity Category I shall bear on the front panel the signal word "Danger." In addition if the product was assigned to Toxicity Category I on the basis of its oral, inhalation or dermal toxicity (as distinct from skin and eye local effects) the word "Poison" shall appear in red on a background of distinctly contrasting color and the skull and crossbones shall appear in immediate proximity to the word "poison."

(B) *Toxicity Category II.* All pesticide products meeting the criteria of Toxicity Category II shall bear on the front panel the signal word "Warning."

(C) *Toxicity Category III.* All pesticide products meeting the criteria of Toxicity Category III shall bear on the front panel the signal word "Caution."

(D) *Toxicity Category IV.* All pesticide products meeting the criteria of Toxicity Category IV shall bear on the front panel the signal word "Caution."

(E) *Use of signal words.* Use of any signal word(s) associated with a higher Toxicity Category is not permitted except when the Agency determines that such labeling is necessary to prevent unreasonable adverse effects on man or the environment. In no case shall more than one human hazard signal word appear on the front panel of a label.

(ii) *Child hazard warning.* Every pesticide product label shall bear on the front panel the statement "keep out of reach of children." Only in cases where the likelihood of contact with children during distribution, marketing, storage or use is demonstrated by the applicant to be extremely remote, or if the nature of the pesticide is such that it is approved for use on infants or small children, may the Administrator waive this requirement.

(iii) *Statement of practical treatment*—(A) *Toxicity Category I.* A statement of practical treatment (first aid or other) shall appear on the front panel of the label of all pesticides falling into Toxicity Category I on the basis of oral, inhalation or dermal toxicity. The Agency may, however, permit reasonable variations in the

placement of the statement of practical treatment is some reference such as "See statement of practical treatment on back panel" appears on the front panel near the word "Poison" and the skull and crossbones.

(B) *Other toxicity categories.* The statement of practical treatment is not required on the front panel except as described in paragraph (h)(1)(iii)(A) of this section. The applicant may, however, include such a front panel statement at his option. Statements of practical treatment are, however, required elsewhere on the label in accord with paragraph (h)(2) of this section if they do not appear on the front panel.

(iv) *Placement and prominence.* All the require front panel warning statements shall be grouped together on the label, and shall appear with sufficient prominence relative to other front panel text and graphic material to make them unlikely to be overlooked under customary conditions of purchase and use. The following table shows the minimum type size requirements for the front panel warning statements on various sizes of labels:

Size of label front panel in square inches	Points	
	Required signal word, all capitals	"Keep out of reach of Children"
5 and under	6	6
Above 5 to 10	10	6
Above 10 to 15	12	8
Above 15 to 30	14	10
Over 30	18	12

(2) *Other required warnings and precautionary statements.* The warnings and precautionary statements as required below shall appear together on the label under the general heading "Precautionary Statements" and under appropriate subheadings of "Hazard to Humans and Domestic Animals," "Environmental Hazard" and "Physical or Chemical Hazard."

(i) *Hazard to humans and domestic animals.* (A) Where a hazard exists to humans or domestic animals, precautionary statements are required indicating the particular hazard, the route(s) of exposure and the precautions to be taken to avoid accident, injury or damage. The precautionary paragraph shall be immediately preceded by the appropriate hazard signal word.

(B) The following table depicts typical precautionary statements. These statements must be modified or expanded to reflect specific hazards.

Toxicity category	Precautionary statements by toxicity category	
	Oral, inhalation, or dermal toxicity	Skin and eye local effects
I	Fatal (poisonous) if swallowed [inhaled or absorbed through skin]. Do not breathe vapor [dust or spray mist]. Do not get in eyes, on skin, or on clothing [Front panel statement of practical treatment required.].	Corrosive, causes eye and skin damage [or skin irritation]. Do not get in eyes, on skin, or on clothing. Wear goggles or face shield and rubber gloves when handling. Harmful or fatal if swallowed. [Appropriate first aid statement required.]
II	May be fatal if swallowed [inhaled or absorbed through the skin]. Do not breathe vapors [dust or spray mist]. Do not get in eyes, on skin, or on clothing. [Appropriate first aid statements required.].	Causes eye [and skin] irritation. Do not get in eyes, on skin, or on clothing. Harmful if swallowed. [Appropriate first aid statement required.]
III	Harmful if swallowed [inhaled or absorbed through the skin]. Avoid breathing vapors [dust or spray mist]. Avoid contact with skin [eyes or clothing]. [Appropriate first aid statement required.].	Avoid contact with skin, eyes or clothing. In case of contact immediately flush eyes or skin with plenty of water. Get medical attention if irritation persists.
IV	[No precautionary statements required.]	[No precautionary statements required.]

(ii) *Environmental hazards.* Where a hazard exists to non target organisms excluding humans and domestic animals, precautionary statements are required stating the nature of the hazard and the appropriate precautions to avoid potential accident, injury or damage. Examples of the hazard statements and the circum-

stances under which they are required follow:

(A) If a pesticide intended for outdoor use contains an active ingredient with a mammalian acute oral LD_{50} of 100 or less, the statement "This Pesticide is Toxic to Wildlife" is required.

(B) If a pesticide intended for outdoor use contains an active ingredient with a fish acute LC_{50} of 1 ppm or less, the statement "This Pesticide is Toxic to Fish" is required.

(C) If a pesticide intended for outdoor use contains an active ingredient with an avian acute oral LD_{50} of 100 mg/kg or less, or a subacute dietary LC_{50} of 500 ppm or less, the statement "This Pesticide is Toxic to Wildlife" is required.

(D) If either accident history or field studies demonstrate that use of the pesticide may result in fatality to birds, fish or mammals, the statement "This pesticide is extremely toxic to wildlife (fish)" is required.

(E) For uses involving foliar application to agricultural crops, forests, or shade trees, or for mosquito abatement treatments, pesticides toxic to pollinating insects must bear appropriate label cautions.

(F) For all outdoor uses other than aquatic applications the label must bear the caution "Keep out of lakes, ponds or streams. Do not contaminate water by cleaning of equipment or disposal of wastes."

(iii) *Physical or chemical hazards.* Warning statements on the flammability or explosive characteristics of the pesticide are required as follows:

Flash point	Required text
(A) PRESSURIZED CONTAINERS	
Flash point at or below 20° F; if there is a flashback at any valve opening.	Extremely flammable. Contents under pressure. Keep away from fire, sparks, and heated surfaces. Do not puncture or incinerate container. Exposure to temperatures above 130° F may cause bursting.
Flash point above 20° F and not over 80° F or if the flame extension is more than 18 in long at a distance of 6 in from the flame.	Flammable. Contents under pressure. Keep away from heat, sparks, and open flame. Do not puncture or incinerate container. Exposure to temperatures above 130° F may cause bursting.
All other pressurized containers	Contents under pressure. Do not use or store near heat or open flame. Do not puncture or incinerate container. Exposure to temperatures above 130° F may cause bursting.
(B) NONPRESSURIZED CONTAINERS	
At or below 20° F	Extremely flammable. Keep away from fire, sparks, and heated surfaces.
Above 20° F and not over 80° F	Flammable. Keep away from heat and open flame.
Above 80° F and not over 150° F	Do not use or store near heat or open flame.

(i) *Directions for Use*—(1) *General requirements*—(i) *Adequacy and clarity of directions.* Directions for use must be stated in terms which can be easily read and understood by the average person likely to use or to supervise the use of the pesticide. When followed, directions must be adequate to protect the public from fraud and from personal injury and to prevent unreasonable adverse effects on the environment.

(ii) *Placement of directions for use.* Directions may appear on any portion of the label provided that they are conspicuous enough to be easily read by the user of the pesticide product. Directions for use may appear on printed or graphic matter which accompanies the pesticide provided that:

(A) If required by the Agency, such printed or graphic matter is securely attached to each package of the pesticide, or placed within the outside wrapper or bag;

(B) The label bears a reference to the directions for use in accompanying leaflets or circulars, such as "See directions in the enclosed circular:" and

(C) The Administrator determines that it is not necessary for such directions to appear on the label.

(iii) *Exceptions to requirement for direction for use*—(A) Detailed directions for use may be omitted from labeling of pesticides which are intended

for use only by manufacturers of products other than pesticide products in their regular manufacturing processes, provided that:

(*1*) The label clearly shows that the product is intended for use only in manufacturing processes and specifies the type(s) of products involved.

(*2*) Adequate information such as technical data sheets or bulletins, is available to the trade specifying the type of product involved and its proper use in manufacturing processes;

(*3*) The product will not come into the hands of the general public except after incorporation into finished products; and

(*4*) The Administrator determines that such directions are not necessary to prevent unreasonable adverse effects on man or the environment.

(B) Detailed directions for use may be omitted from the labeling of pesticide products for which sale is limited to physicians, veterinarians, or druggists, provided that:

(*1*) The label clearly states that the product is for use only by physicians or veterinarians;

(*2*) The Administrator determines that such directions are not necessary to prevent unreasonable adverse effects on man or the environment; and

(*3*) The product is also a drug and regulated under the provisions of the Federal Food, Drug and Cosmetic Act.

(C) Detailed directions for use may be omitted from the labeling of pesticide products which are intended for use only by formulators in preparing pesticides for sale to the public, provided that:

(*1*) There is information readily available to the formulators on the composition, toxicity, methods of use, applicable restrictions or limitations, and effectiveness of the product for pesticide purposes;

(*2*) The label clearly states that the product is intended for use only in manufacturing, formulating, mixing, or repacking for use as a pesticide and specifies the type(s) of pesticide products involved;

(*3*) The product as finally manufactured, formulated, mixed, or repackaged is registered; and

(*4*) The Administrator determines that such directions are not necessary to prevent unreasonable adverse effects on man or the environment.

(*2*) *Contents of Directions for Use.* The directions for use shall include the following, under the headings "Directions for Use":

(i) The statement of use classification as prescribed in 162.10(j) immediately under the heading "Directions for Use."

(ii) Immediately below the statement of use classification, the statement "It is a violation of Federal law to use this product in a manner inconsistent with its labeling."

(iii) The site(s) of application, as for example the crops, animals, areas, or objects to be treated.

(iv) The target pest(s) associated with each site.

(v) The dosage rate associated with each site and pest.

(vi) The method of application, including instructions for dilution, if required, and type(s) of application apparatus or equipment required.

(vii) The frequency and timing of applications necessary to obtain effective results without causing unreasonable adverse effects on the environment.

(viii) Specific limitations on reentry to areas where the pesticide has been applied, meeting the requirements concerning reentry provided by 40 CFR Part 170.

(ix) Specific directions concerning the storage and disposal of the pesticide and its container, meeting the requirements of 40 CFR Part 165. These instructions shall be grouped and appear under the heading "Storage and Disposal." This heading must be set in type of the same minimum sizes as required for the child hazard warning (See Table in § 162.10(h)(1)(iv).)

(x) Any limitations or restrictions on use required to prevent unreasonable adverse effects, such as:

(A) Required intervals between application and harvest of food or feed crops.

(B) Rotational crop restrictions.

(C) Warnings as required against use on certain crops, animals, objects, or in or adjacent to certain areas.

(D) [Reserved]

(E) For restricted use pesticides, a statement that the pesticide may be applied under the direct supervision of a certified applicator who is not physically present at the site of application but nonetheless available to the person applying the pesticide, unless the Agency has determined that the pesticide may only be applied under the direct supervision of a certified applicator who is physically present.

(F) Other pertinent information which the Administrator determines to be necessary for the protection of man and the environment.

(j) *Statement of Use Classification.* By October 22, 1976, all pesticide products must bear on their labels a statement of use classification as described in paragraphs (j)(1) and (2) of this section. Any pesticide product for which some uses are classified for general use and others for restricted use shall be separately labeled according to the labeling standards set forth in this subsection, and shall be marketed as separate products with different registration numbers, one bearing directions only for general use(s) and the other bearing directions for restricted use(s) except that, if a product has both restricted use(s) and general use(s), both of these uses may appear on a product labeled for restricted use. Such products shall be subject to the provisions of § 162.10(j)(2).

(1) *General Use Classification.* Pesticide products bearing directions for use(s) classified general shall be labeled with the exact words "General Classification" immediately below the heading "Directions for Use." And reference to the general classification that suggests or implies that the general utility of the pesticide extends beyond those purposes and uses contained in the Directions for Use will be considered a false or misleading statement under the statutory definitions of misbranding.

(2) *Restricted Use Classification.* Pesticide products bearing direction for use(s) classified restricted shall bear statements of restricted use classification on the front panel as described below:

(i) *Front panel statement of restricted use classification.* (A) At the top of the front panel of the label, set in type of the same minimum sizes as required for human hazard signal words (see table in § 162.10(h)(1)(iv)), and appearing with sufficient prominence relative to other text and graphic material on the front panel to make it unlikely to be overlooked under customary conditions of purchase and use, the statement "Restricted Use Pesticide" shall appear.

(B) Directly below this statement on the front panel, a summary statement of the terms of restriction imposed as a precondition to registration shall appear. If use is restricted to certified applicators, the following statement is required: "For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification." If, however, other regulatory restrictions are imposed, the Administrator will define the appropriate wording for the terms of restriction by regulation.

(k) Advertising. [Reserved]

[40 FR 28268, July 3, 1975; 40 FR 32329, Aug. 1, 1975; 40 FR 36571, Aug. 21, 1975, as amended at 43 FR 5786, Feb. 9, 1978]

§ 162.11 Criteria for determinations of unreasonable adverse effects.

(a) *Criteria for Issuance of Notice of Intent to Deny Registration, Cancel Registration, or to Hold a Hearing—*(1) *Presumption.* (i) A rebuttable presumption shall arise that a notice of intent to deny registration pursuant to section 3(c)(6) of the Act, a notice of intent to cancel registration pursuant to section 6(b)(1) of the Act, or a notice of intent to hold a hearing to determine whether the registration should be cancelled or denied, as appropriate, shall be issued, upon a determination by the Administrator that the pesticide meets or exceeds any of the criteria for risk set forth in paragraph (a)(3) of this section. Upon such determination, the Administrator shall issue notice by certified mail to the applicant or registrant, as the case may be, stating that the applicant or registrant has the opportunity to submit evidence in rebuttal of such presumption in accordance with paragraph (a)(4) of this section. The applicant or registrant shall have forty-five

LABELING REQUIREMENTS OF THE FIFRA, AS AMENDED (REFER TO THE SAMPLE LABELS FOLLOWING)

ITEM	LABEL ELEMENT	APPLICABILITY OF REQUIREMENT	PLACEMENT ON LABEL		COMMENTS
			REQUIRED	PREFERRED	
1	Product name	All products	Front panel	Center front panel	
2	Company name and address	All products	None	Bottom front panel or end of label text	If registrant is not the producer, must be qualified by "Packed for . . .," "Distributed by. . .," etc.
3	Net contents	All products	None	Bottom front panel or end of label text	May be in metric units in addition to U.S. units
4	EPA Est. No.	All products	None	Front panel	Must be in similar type size and run parallel to other type.
5	EPA Reg. No.	All products	None	Front panel, immediately before or following Reg. No.	May appear on the container instead of the label.
6A	Ingredients statement	All products	Front panel	Immediately following product name	Text must run parallel with other text on the panel.
6B	Pounds/gallon statement	Liquid products where dosage given as lbs. ai/unit area	Front panel	Directly below the main ingredients statement	
7	Front panel precautionary statements	All products	Front panel		All front panel precautionary statements must be grouped together, preferably blocked.
7A	Keep Out of Reach of Children (Child hazard warning)	All products	Front panel	Above signal word	Note type size requirements.
7B	Signal word	All products	Front panel	Immediately below child hazard warning	Note type size requirements.

ITEM	LABEL ELEMENT	APPLICABILITY OF REQUIREMENT	PLACEMENT ON LABEL		COMMENTS
			REQUIRED	PREFERRED	
7C	Skull & cross-bones and word POISON (in red)	All products which are Category I based on oral, dermal, or inhalation toxicity	Front panel	Both in close proximity to signal word	
7D	Statement of practical treatment	All products in Categories I, II, and III	Category I: Front panel unless referral statement is used. Others: Grouped with side panel precautionary statements.	Front panel for all.	
7E	Referral statement	All products where precautionary labeling appears on other than front panel.	Front panel		
8	Side/back panel precautionary statements	All products	None	Top or side of back panel preceding directions for use	Must be grouped under the headings in 8A, 8B, and 8C; preferably blocked.
8A	Hazards to humans and domestic animals	All products in Categories I, II, and III	None	Same as above	Must be preceded by appropriate signal word.
8B	Environmental hazards	All products	None	Same as above	Environmental hazards include bee caution where applicable.

ITEM	LABEL ELEMENT	APPLICABILITY OF REQUIREMENT	PLACEMENT ON LABEL		COMMENTS
			REQUIRED	PREFERRED	
8C	Physical or chemical hazards	All pressurized products, others with flash points under 150°F	None	Same as above	
9A	Restricted block	All restricted products	Top center of front panel	Preferably blocked	Includes a statement of the terms of restriction. The words "RESTRICTED USE PESTICIDE" must be same type size as signal word.
9C	Misuse statement	All products	Immediately following statement of classification or ahead of directions for use		
10A	Re-entry statement	All cholinesterase inhibitors	In the directions for use	Immediately after misuse statement	
10C	Storage and disposal block	All products	In the directions for use	Immediately before specific directions for use or at the end of directions for use	Must be set apart and clearly distinguishable from from other directions for use.
10D U.S.	Directions for use	All products	None	None	May be in metric as well as U.S. units

PHYSICAL-CHEMICAL HAZARDS

Criteria	Required Label Statement
I. Pressurized Containers	
A. Flashpoint at or below 20°F; or if there is a flashback at any valve opening.	Extremely flammable. Contents under pressure. Keep away from fire, sparks, and heated surfaces. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.
B. Flashpoint above 20°F and not over 80°F; or if the flame extension is more than 18 inches long at a distance of 6 inches from the valve opening.	Flammable. Contents under pressure. Keep away from heat, sparks, and flame. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.
C. ALL OTHER PRESSURIZED CONTAINERS	Contents under pressure. Do not use or store near heat or open flame. Do not puncture or incinerate container. Exposure to temperatures above 130°F may cause bursting.
II. Non-Pressurized Containers	
A. Flashpoint at or below 20°F.	Extremely flammable. Keep away from fire, sparks, and heated surfaces.
B. Flashpoint above 20°F and over 80°F.	Flammable. Keep away from heat and open flame.
C. Flashpoint over 80°F and not over 150°F.	Do not use or store near heat and open flame.
D. Flashpoint above 150°F.	None required.

STORAGE AND DISPOSAL INSTRUCTIONS FOR PESTICIDES

All products are required to bear specific label instructions about storage and disposal. Storage and disposal instructions must be grouped together in the directions for use portion of the label under the heading STORAGE AND DISPOSAL. Products intended solely for domestic use need not include the heading "STORAGE AND DISPOSAL." The STORAGE AND DISPOSAL heading must appear in the minimum type size listed below:

Size of label front panel in square inches	Required type size for the heading STORAGE AND DISPOSAL (all capitals)
10 and under	.6 point
Above 10 to 15	.8 point
Above 15 to 30	10 point
Over 30	12 point

Storage and disposal instructions must be set apart and clearly distinguishable from other directions for use. Blocking storage and disposal statements with a solid line is suggested as a means of increasing their prominence.

A. Storage Instructions:

All product labels are required to have appropriate storage instructions. Specific storage instructions are not prescribed. Each registrant must develop his own storage instructions, considering, when applicable, the following factors:

1. Conditions of storage that might alter the composition or usefulness of the pesticide. Examples could be temperature extremes, excessive moisture or humidity, heat, sunlight, friction, or contaminating substances or media.

2. Physical requirements of storage which might adversely affect the container of the product and its ability to continue to function properly. Requirements might include positioning of the container in storage, storage or damage due to stacking, penetration of moisture, and ability to withstand shock or friction.

3. Specifications for handling the pesticide container, including movement of container within the storage area, proper opening and closing procedures (particularly for opened containers), and measures to minimize exposure while opening or closing container.

4. Instructions on what to do if the container is damaged in any way, or if the pesticide is leaking or has been spilled, and precautions to minimize exposure if damage occurs.

5. General precautions concerning locked storage, storage in original container only, and separation of pesticides during storage to prevent cross-contamination of other pesticides, fertilizer, food, and feed.

6. General storage instructions for household products should emphasize storage in original container and placement in locked storage areas.

B. Pesticide Disposal Instructions:

The label of all products, except those intended solely for domestic use, must bear explicit instructions about pesticide disposal. The statements listed below contain the exact wording that must appear on the label of these products:

1. The labels of all products, except domestic use, must contain the statement, "Do not contaminate water, food, or feed by storage or disposal."

2. Except those products intended solely for domestic use, the labels of all products that contain active ingredients appearing on the "Acutely Hazardous" Commercial Pesticide Products List (RCRA "E" List) at the end of this appendix or are assigned to Toxicity Category I on the basis of oral or dermal toxicity, skin or eye irritation potential, or Toxicity Category I or II on the basis of acute inhalation toxicity must bear the following pesticide disposal statement:

   "Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance."

   The labels of all products, except those intended for domestic use, containing active or inert ingredients that appear on the "Toxic" Commercial Pesticide Products List (RCRA "F" List) at the end of this appendix or presently meet any of the criteria in Subpart C, 40 CFR 261 for a hazardous waste must bear the following pesticide disposal statement:

"Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance."

Labels for all other products, except those intended for domestic use, must bear the following pesticide disposal statement:

"Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility."

3. Products intended for domestic use only must bear the following disposal statement: "Securely wrap original container in several layers of newspaper and discard in trash."

C. Container Disposal Instructions

The label of each product must bear container disposal instructions appropriate to the type of container.

1. All products intended for domestic use must bear one of the following container disposal statements:

Container Type	Statement
Non-aerosol products (bottles, cans, jars)	Do not reuse container (bottle, can, jar). Rinse thoroughly before discarding in trash.
Non-aerosol products (bags)	Do not reuse bag. Discard bag in trash.
Aerosol products	Replace cap and discard containers in trash. Do not incinerate or puncture.

2. The labels for all other products must bear container disposal instructions, based on container type, listed below:

Container Type	Statement
Metal containers (non-aerosol)	Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.
Plastic containers	Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.
Glass containers	Triple rinse (or equivalent). Then dispose of in a sanitary landfill or by other approved state and local procedures.

Container Type	Statement
Fiber drums with liners	Completely empty liner by shaking and tapping sides and bottom to loosen clinging particles. Empty residue into application equipment. Then dispose of liner in a sanitary landfill or by incineration if allowed by state and local authorities. If drum is contaminated and cannot be reused[1], dispose of in the same manner.
Paper and plastic bags	Completely empty bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.
Compressed gas cylinders	Return empty cylinder for reuse (or similar wording).

[1]Manufacturer may replace this phrase with one indicating whether and how fiber drum may be reused.

2. The labels for all other products must bear container disposal instructions, based on container type, listed on the first page of this Appendix.

Pesticides that are hazardous wastes under 40 CFR 261.33(e) and (f) when discarded.

"Acutely Hazardous" Commercial Pesticides (RCRA "E" List)
Active Ingredients, (no inerts):

Acrolein
Aldicarb
Aldrin
Allyl alcohol
Aluminum phosphide
4-Aminopyridine
Arsenic acid
Arsenic pentoxide
Arsenic trioxide
Calcium cyanide
Carbon disulfide
p-Chloroaniline
Cyanides (soluble cyanide salts, not specified elsewere)
Cyanogen chloride
2-Cyclohexyl-4,6-dinitrophenol
Dieldrin
0,0-Diethyl S-[2-ethylthio)ethyl] phosphorodithioate
(disulfoton, Di-Syston)
0,0-Diethyl 0-pyrazinyl phosphorothioate (Zinophos)
Dimethoate
0,0-Dimethyl 0-p-nitrophenyl phosphorothioate (methyl parathion)
4,6-Dinitro-o-cresol and salts
4,6-Dinitro-o-cyclohexylphenol
2,4 Dinitrophenol
Dinoseb
Endosulfan
Endothall
Endrin
Famphur
Fluoroacetamide
Heptachlor
Hexanethyl tetraphosphate
Hydrocyanic acid
Hydrogen cyanide
Methomyl
alpha-Naphthylthiourea (ANTU)
Nicotine and salts
Octamethylpyrophosphoramide (OMPA, schradan)
Parathion

"Acutely Hazardous" Commercial Pesticides (RCRA "E" List)
Active Ingredients continued:

Phenylmercuric acetate (PMA)
Phorate
Potassium cyanide
Propargyl alcohol
Sodium azide
Sodium cyanide
Sodium fluoroacetate
Strychnine and salts
0,0,0,0-Tetraethyl dithiopyrophosphate (sulfotepp)
Tetraethyl pyrophosphate
Thallium sulfate
Thiofanox
Toxaphene
Warfarin
Zinc phosphide

There are currently no inert ingredients for commercial pesticides on the "Acutely Hazardous" List (RCRA "E" List).

"Toxic" Commercial Pesticide Products (RCRA "F" List)
Active Ingredients:

Acetone
Acrylonitrile
Amitrole
Benzene
Bis(2-ethylhexyl)pthalate
Cacodylic acid
Carbon tetrachloride
Chloral (hydrate)
Chlordane (technical)
Chlorobenzene
4-Chloro-m-cresol
Chloroform
o-Chlorophenol
4-Chloro-o-toluidine hydrochloride
Creosote
Cresylic acid
Cyclohexane
Decachlorooctahydro-1,3,4-metheno-2H-cyclobuta[c,d]-pentalen-2-one
(kepone, chlordecone)
1,2-Dibromo-3-chloropropane (DBCP)
Dibutyl phthalate
S-3,3-(Dichloroallyl diisopropylthiocarbamate (diallate, Avadex)
o-Dichlorobenzene
p-Dichlorobenzene
Dichlorodifluoromethane (Freon 12®)
3,5-Dichloro-N-(1,1-dimethyl-2-propynyl) benzamide (pronamide,Kerb)
Dichloro diphenyl dichloroethane (DDD)
Dichloro diphenyl trichloroethane (DDT)
Dichlorethyl ether
2,4-Dichlorophenoxyacetic, esters and salts (2,4-D)
1,2-Dichloropropane
1,3-Dichloropropane (Telone)
Dimethyl phthalate
Ethyl acetate
Ethyl 4,4'-dichlorobenzilate (chlorobenzilate)
Ethylene dibromide (EDB)
Ethylene dichloride
Ethylene oxide
Formaldehyde
Furfural
Hexachlorobenzene
Hexachlorocyclopentadiene
Hexachloroethane
Hydrofluoric acid

"Toxic" Commercial Pesticide Products (RCRA "F" List)
Active Ingredients:

Isobutyl alcohol
Lead acetate
Lindane
Maleic hydrazide
Mercury
Methyl alcohol
Methyl bromide
Methyl chloride
2,2'-Methylenebis (3,4,6-trichlorophenol) (hexachlorophene)
Methylene chloride
Methyl ethyl ketone
4-Methyl-2-pentanone (methyl isobutyl ketone)
Naphthalene
Nitrobenzene
p-Nitrophenol
Pentachloroethane
Pentachloronitrobenzene (PCNB)
Pentaclorophenol
Phenol
Phosphorodithioic acid, 0,0-diethyl, methyl ester
Propylene dichloride
Pyridine
Resorcinol
Safrole
Selenium disulfide
Silvex
1,2,4,5-Tetrachlorobenzene
1,1,2,2-Tetrachloroethane
Tetrachloroethylene
2,3,4,6-Tetrachlorophenol
Thiram
Toluene
1,1,1-Trichloroethane
Trichloroethylene
Trichloromonofluoromethane (Freon 11®)
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol
2,4,5-Trichlorophenoxyacetic acid (2,4,5-T)
Xylene

"Toxic" Commercial Pesticide Products (RCRA "F" List)
Inert Ingredients:

Acetone
Acetonitrile
Acetophenone
Acrylic acid
Aniline
Benzene
Chlorobenzene
Chloroform
Cyclohexane
Cyclohexanone
Dichlorodifluoromethane (Freon 12®)
Diethyl phthalate
Dimethylamine
Dimethyl phthalate
1,4-Dioxane
Ethylene oxide
Formaldehyde
Formic acid
Isobutyl alcohol
Meleic anhydride
Methyl alcohol (methanol)
Methyl ethyl ketone
Methyl methacrylate
Naphthalene
Saccharin and salts
Thiourea
Toluene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichlorofluoromethane (Freon 11®)
Vinyl chloride
Xylene